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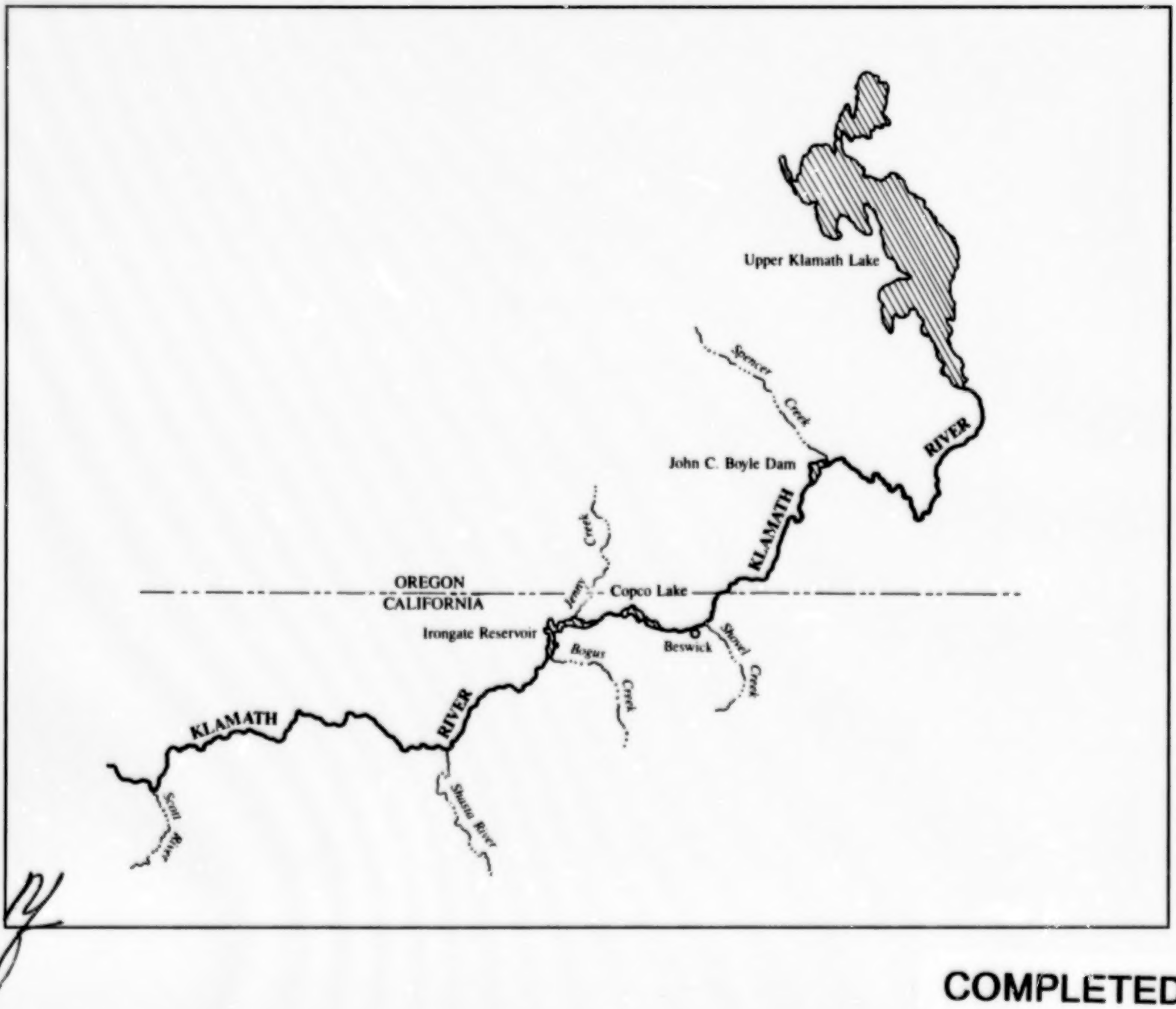
Klamath River Canyon Prehistory and Ethnology

Upper Klamath River Canyon Prehistory -
Joanne M. Mack

Klamath River Canyon Ethnology Study -
Dorothea J. Theodoratus, Myreleen M. Ashman, Helen McCarthy, and Donna L. Genetti

Cultural Resource Series No. 8



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Foreward

In 1988, Congress directed the Bureau of Land Management to assess the suitability of the Klamath River Canyon for future Wild and Scenic River designation status. Earlier in the 1980s, much cultural resource work was performed along this stretch of the Klamath River as part of assessing effects of proposed development projects. Given the important resource values identified by those studies as well as by previous archaeological work in the area dating back to the 1950s, it was considered timely to synthesize the accumulated information and follow new leads. The two studies contained in this volume resulted from this initiative. As a result of the studies, archaeological resources and Native American traditional uses were identified by BLM as outstandingly remarkable values associated with the Klamath River Canyon in the resultant report to Congress.

It should be noted that Dr. Mack had previously conducted doctoral studies in the study area and had published those results. Her contribution in this volume presents a rethinking of previous conclusions based on the more recent discoveries in the area and from the region at large.

Richard C. Hanes
Editor

UPPER KLAMATH RIVER CANYON PREHISTORY

by

JOANNE M. MACK

for

United States Bureau of Land Management
Lakeview District, Klamath Falls Office

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ABSTRACT

This report results from analysis of the archaeological collections from prehistoric sites within the Upper Klamath River Canyon of Oregon and California. It presents a synthesis of the data known for the area as of the summer of 1989. The archaeological data includes all materials collected from 1953 to 1989, primarily as a result of proposed hydroelectric projects. Forty-two prehistoric sites have been recorded within the project area by 1989; several additional sites have been recorded within the last two years by archeaologists from the Lakeview District, U. S. Bureau of Land Management.

The archaeological data indicates the canyon has been used by Native American groups for at least the last 7000 years. The sites resulting from this use include both occupation and special activity sites, which have revealed diverse artifacts of stone, bone, shell and ceramics. These material remains have been used by researchers to build hypotheses concerning the prehistory of the canyon. This report discusses several of these hypotheses and attempts to begin testing some of them using the entire body of archaeological data from Upper Klamath River Canyon, as well as data from adjacent regions. Some of the hypotheses concern chronology, some subsistence and settlement patterns, some ethnic boundaries and some cultural interaction with surrounding areas.

ACKNOWLEDGEMENTS

Several people and institutions have been invaluable for the completion of this project. Greatest thanks goes to the staff of the Museum of Natural History, University of Oregon, especially Dr. Don Dumond and Ms. Pam Endzwig. Most of the prehistoric collections from Upper Klamath River Canyon are curated by the museum. In addition to giving access to the various collection and providing me with a workroom, Ms. Endzwig has spent time finding specific collections from the project area, including one which was traced to an institution in California. Special thanks is also due to three Bureau of Land Management archaeologist, Dr. Richard Hanes, Regional Archaeologist, William Cannon, District Archaeologist, Lakeview District and Carla Burnside, Archaeologist at the district's Klamath Falls Office. Dr. Hanes has traced the location of some of the collections, which have not been properly deposited with the museum at the University of Oregon and has hand-delievered one of those collections to the museum. Mr. Cannon and Ms. Burnside have provided a great deal of valuable information. In addition, Ms. Burnside has guided me on a two-day walking and driving tour of the project area.

The staff at the Museum of Comparative Zoology, University of California, Berkeley gave access to the vertebrate skeletons needed for the faunal analysis. The staff of the Lowie Museum of Anthropology also gave access to the archaeologic and ethnographic collections relevant to the project as well as information; especially helpful were Larry Dawson and Dave Herod. Also invaluable to this study was the staff at the Information Center for the Northeastern California Region at California State University, Chico by providing access to both maps and unpublished documents.

Several other individuals were extremely helpful in providing information for this study, they include Lyman Deich, Suzaane Griset, Steve Heipeo, Winfield Henn, Richard Hughes, Jerald Johnson, Keith Johnson, Jeff LeLande, Don Manual, Elena Nilsson, Eric Ritter, James Rock, Elaine Sundahl and Katie Winthrop. The study benefited because of my opportunity to talk with these individuals. I especially wish to thank Winfield Henn, Jerald Johnson, Keith Johnson, Jeff Lelande, Don Manual, Elena Nilsson and Eric Ritter for either lending or giving copies of reports useful to this project.

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CHAPTER I-INTRODUCTION

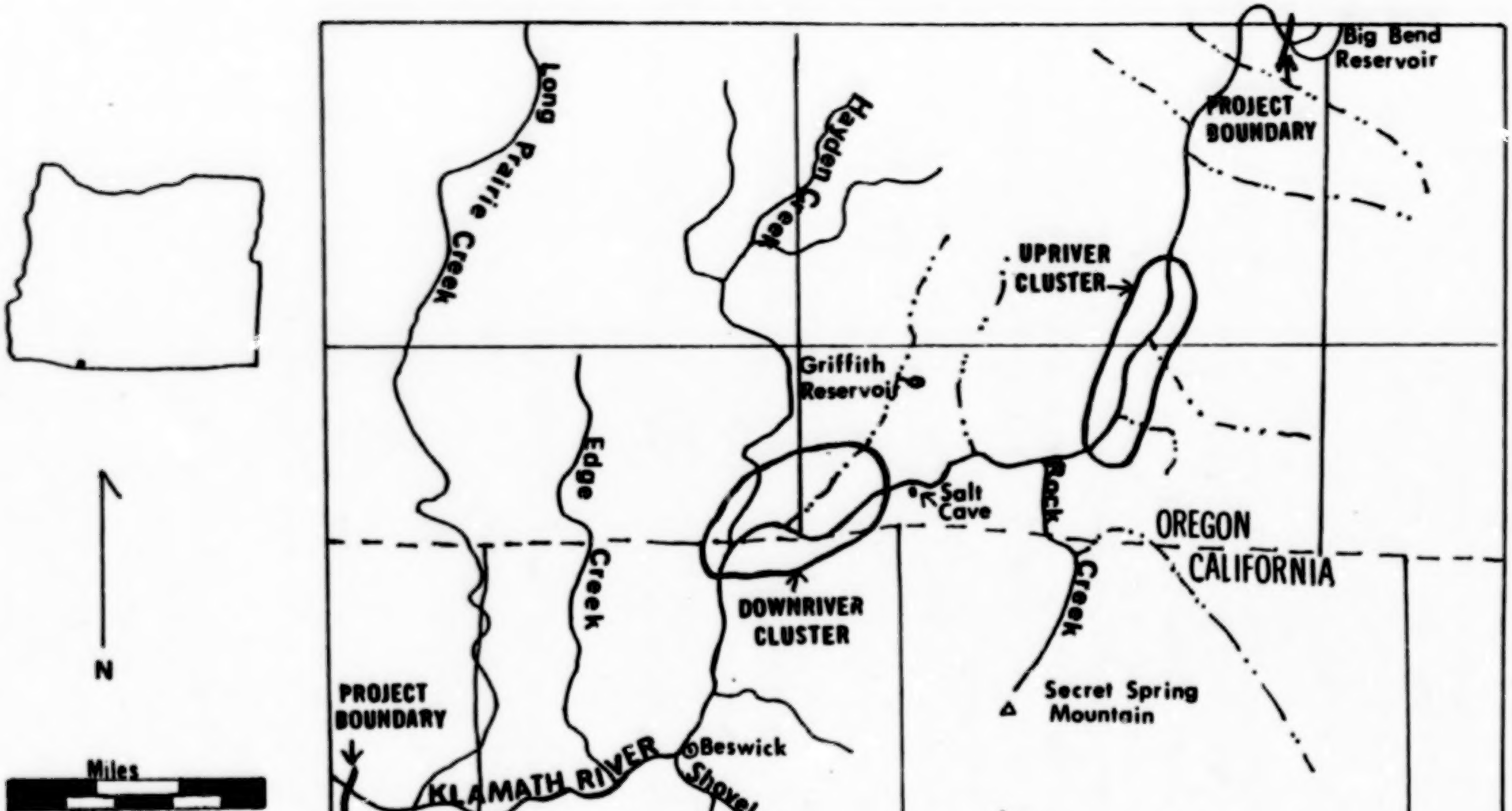
Investigation of Upper Klamath River Canyon prehistory began in 1958 with the University of Oregon's survey and test excavations within the proposed John C. Boyle Dam Reservoir area for the California-Oregon Power Company. It continued sporatically over the past thirty years. Designed for use by the Bureau of Land Management for planning and management purposes, this document consolidates and synthesizes the data collected over these years by using the analytical framework established by Mack (1979;1983). The research and analysis began in June 1989, after preliminary examination by the author in August 1988 of the artifacts recovered during the 1984-1986 seasons from the Upper Klamath River Canyon.

The results of research and analysis of the archaeological data available on the prehistory of the Upper Klamath River Canyon are reported here, including a synthesis of the prehistory of the Upper Klamath River and a comparison of its prehistory with the prehistory of selected adjacent areas: the Klamath Basin, the Upper Rogue River and its drainages, and the Middle Pit River and its drainages and a synthesis of the prehistory of the Upper Klamath River. An important part of the synthesis includes an evaluation of several hypotheses proposed over the last ten years concerning the prehistory of the Upper Klamath River Canyon.

BACKGROUND

The study area includes the Upper Klamath River Canyon from the John C. Boyle Dam, approximately river mile 225, in Oregon, downriver to the backwater of COPCO Reservoir, river mile 204, in California (Fig. 1). Within Oregon the eastern and western boundaries of the study area follow the upper rim of the canyon. In California the eastern and western boundaries are 1/4 mile from the river bank. For the latter, this places the eastern boundary in Sections 13 and 14 (T48N, R3W) and the western boundary in Section 15 (T48N, R3W). The study area corresponds to what has been called the Salt Cave Locality of the Upper Klamath River (Mack 1983). This

FIGURE I UPPER KLAMATH RIVER CANYON



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stretch of the Klamath River cuts through the Cascade Range forming what has been called Klamath Gorge.

Archaeological work within the Upper Klamath River Canyon began in 1958 by the University of Oregon for Pacific Power and Light, California-Oregon Power Company Division, on the Big Bend Project which included the area later effected by the construction of the John C. Boyle Dam and Reservoir. A brief preliminary report in 1959 outlined the results of the project's excavations, the analysis of the artifacts recovered, and recommendations for monitoring and further investigation of 35KL15 downstream from the dam. Most of the artifacts and faunal remains were recovered from one rockshelter, 35KL13 inundated by John C. Boyle Reservoir (Newman and Cressman 1959). The next archaeological project within the canyon was the Iron Gate Project, 1960-1961, also a salvage operation needed because of planned construction of a dam, power plant, and reservoir. Afterwards, the Salt Cave Project lasted from March 1961 to August 1963 with an archaeological survey of and excavations within a proposed dam and pool area for Pacific Power and Light. A total of twelve sites were recorded and given the numbers S.C. 1 through S.C. 12. Subsequent analysis of the sites resulted in two of the sites being combined for a final total of eleven sites officially numbered 35KL16 through 35KL26. During the three seasons (1961-1963) of fieldwork the crews from the University of Oregon test excavated three sites, extensively excavated three sites and surface collected four other sites; only 35KL26 lacked any archaeological work during the three seasons of fieldwork. The crews excavated 73.1 cubic meters from 35KL21, Klamath Shoal Midden, 61.5 cubic meters from 35KL18, Big Boulder Village and approximately 100 cubic meters from 35KL16, Border Village. Three preliminary reports briefly reported the description and analysis of this archaeological work (Cressman and Wells 1961; Cressman et al 1962; Anderson and Cole 1964). A final report of the information recovered from these three seasons and an interpretation and hypotheses completed by Mack in 1979 as a doctoral dissertation for the University of Oregon, Department of Anthropology, was later published (Mack 1983).

A revised and renewed proposal for the Salt Cave Dam initiated additional archaeological work in 1984. The new proposal for a dam, reservoir and power house within the Salt Cave Locality necessitated an intensive survey of the areas of potential impact and a testing program to gather data to help evaluate the significance of the cultural resources to be impacted. Work in the area was accomplished over three years from 1984-1986. Elliot Gehr headed the investigations from 1984 through the spring of 1986 (Gehr 1985, 1986a, 1986b). Heretofore, the material from his survey and test excavations is referred to as the Gehr Collection. In 1986 Peter Jensen continued the investigations by excavating at 35KL16 and testing 35KL551 as well as some additional survey of the project area. (Jensen 1987), the material from his excavations is referred to in this report as the Jensen Collection. The results of this additional archaeological work increased the number of prehistoric sites in the Upper Klamath River Canyon to 33. Recent archaeological survey by BLM archaeologists Carla Burnside and Bill Cannon added nine additional prehistoric sites in the project area in Oregon for a total number of 42 prehistoric sites.

Three prehistoric sites have been recorded within the project area of Upper Klamath River Canyon on the California side of the border. In 1953 a team from the Archaeological Survey, University of California, Berkeley recorded and test excavated a rockshelter on the north side of the Klamath River near Shovel Creek, CASIS16. The records and artifacts are now stored at the Lowie Museum of Anthropology, University of California, Berkeley; no report resulted from this excavation. In 1980 the BLM recorded two additional prehistoric sites, the Freedom Site and the Laubacher Site (BLM Inventory # 030-060 and 030-061), both on the south side of the river. The Freedom Site was recorded as a housepit village with at least 4 housepits, the Laubacher Site as a midden site with both ground and flake stone tools evident.

RESEARCH PLAN

The research and analysis of the prehistoric data for the Upper Klamath River Canyon included five steps: 1) a literature search; 2) consultation with knowledgeable persons; 3) field reconnaissance of selected prehistoric sites within the project area; 4) examination and recategorization of artifacts; and, 5) examination and identification of faunal remains. The literature search included the assembly of all published and unpublished literature available by July 1989 on the archaeology of the Upper Klamath River and all significant information on the prehistory of the Klamath Basin, the Upper Rogue River and the Middle Pit River. Selected literature on the prehistory of the Upper Sacramento River and the Applegate River were also included. This allowed a clearer understanding of Upper Klamath River Canyon prehistory, giving it a regional framework. In addition four prehistoric site collections were examined briefly at the Lowie Museum of Anthropology, University of California, Berkeley. These four collections resulted from brief test excavations by the Archaeological Survey, University of California, Berkeley, of four sites; which lack written reports. One of these sites, CASIS16, falls within the project area. The collections from two others, CASIS17 and CASIS18, were from the Upper Klamath River drainage; the fourth site, CASHA52, was located within the Middle Pit River drainage. The examination of these collections provided a more complete picture of the archaeological data from these areas.

Consultation by phone or in person with archaeologists knowledgeable about the prehistory of the Upper Klamath River, the Upper Rogue River, the Klamath Basin and the Middle Pit River also added unpublished but recently collected data and formulated hypotheses on the prehistory of these areas. Those contacted included Carla Burnside, Lyman Deich, Steve Heipeo, Winfield Henn, Richard Hughes, Jerald Johnson, Jeff LaLande, Don Manual, Elena Nilsson, Eric Ritter, James Rock, Elaine Sundahl and Kate Winthrop. Because a portion of the project area falls within California, as does much of the Klamath Basin and the Middle Pit River drainages, additional information was obtained from the Information Center for the Northeastern California Region located at California State University, Chico.

On July 27 and 28 a field reconnaissance of several, selected sites within the Upper Klamath River Canyon was conducted in the company of Carla Burnside, BLM archaeologist for the project. The purpose of the reconnaissance was to determine site type and the geographic location of these selected sites (see Appendix A).

The analysis of the prehistoric artifacts and faunal remains collected during the 1984-1986 archaeological seasons in the Upper Klamath River Canyon involved an examination of the artifacts, faunal materials and debitage from the collections curated at the Oregon State Museum of Anthropology. The artifacts were recategorized using the attributes and categories developed by Mack (1983) to describe and analyze the bulk of the prehistoric data from the Upper Klamath River Canyon. Due to additional radiocarbon dates and a more precise dating of time sensitive artifacts within the area, a more detailed chronological framework than the one presented by Mack in 1983 is now possible. For example, Siskiyou Utility Ware, the pottery found within some of the Upper Klamath River Canyon sites has become an horizon marker for the Western Cascades of southern Oregon and northern California, dating consistently from A.D. 900 to A.D. 1600 (Mack 1986, 1989a).

The faunal remains from the Gehr Collection had not been analysed and the faunal analysis from the Jensen Collection was incomplete; therefore, the faunal materials were analysed and identified to genus and species when possible. The analysis and recategorization of the artifacts and debitage and the analysis and identification of the faunal remains from the prehistoric sites excavated from 1984-1986 allowed a synthesis of all the prehistoric data from the Upper Klamath River Canyon.

The integration of the artifacts and faunal remains from the Gehr and Jensen Collections with materials studied by Mack at the University of Oregon also allows for a clearer understanding of the subsistence patterns, settlement patterns and technologies used by the prehistoric inhabitants of the Upper Klamath River Canyon. Data collected by Gehr and Jensen permit a more precise evaluation of changes occurring through the approximately 7000 years of prehistoric use of the canyon; the data also reveal which cultural characteristics seem not to change over time. For example, the large percentage of deer bone (Odocoileus sp.) in the faunal collections from all the sites indicate its importance in the subsistence pattern of the inhabitants of the canyon throughout time.

Recent archaeological investigations in adjacent areas allow some new interpretations of the archaeological data from the Upper Klamath River Canyon. Specifically, the recognition and definition of a tool type known as the McKee Uniface (Figure 2a) permit, upon reexamining the Salt Cave Project flaked stone tools curated at the Oregon State Museum of Anthropology, its identification in one of the archaeological sites excavated by Gehr between 1984 and 1986, 35KL19, and in one site previously analyzed by the author, 35KL18. Similar new insights allow a reevaluation of all the major hypotheses proposed for the prehistory of the canyon.

Each of the three major archaeological investigations by Mack

(1983), Gehr (1985, 1986a) and Jensen (1987) led to several specific hypotheses concerning the prehistory of Upper Klamath River Canyon. As a result of her investigation of the data from the Salt Cave Project, Mack proposed four hypotheses dealing with cultural relationships and subsistence and settlement patterns. In particular, she stressed cultural diversity between the upriver sites and downriver sites which may have ethnic implications but certainly reflected varying influences from adjacent areas such as the Klamath Basin, northwest California and southwest Oregon. This cultural diversity, she argues, was paralleled by subsistence uniformity throughout the canyon over at least the last 3000 years. Gehr proposed several hypotheses based primarily on the proportions and distribution of five groups of artifacts recovered from ten prehistoric sites within Upper Klamath River Canyon. For example, he proposed functional differences between the upriver sites and the downriver sites and between sites within each of those clusters. Jensen's hypotheses based upon his excavation of the midden and part of one housepit at 35KL16, Border Village, centered on that site's prehistory. He expanded some of his hypotheses to include the larger Upper Klamath River Canyon. Primarily he proposed a change in both subsistence and settlement patterns during the Late Prehistoric Period.

The reevaluation of the Gehr and Jensen Collections, the additional information recently available from nearby areas and a more complete faunal analysis of the Gehr and Jensen Collections permits each researcher's hypotheses to be tested. In addition, the most recent data collected in the canyon by BLM archaeologists also permits a fuller understanding of site function, site relationships and resource utilization within the canyon, requiring modifications of the above hypotheses and the addition of some which are new.

CHAPTER 2-DESCRIPTIVE ANALYSIS

ARTIFACTS

Using the attribute system established by Mack on the Salt Cave Project to recategorize artifacts from the Gehr and Jensen Collections required some reassignment of artifacts from one type to another and the elimination of a few functional artifact categories used by Gehr and Jensen in their reports, such as spokeshave and perforator which were not used by Mack (1983). As described by Mack in the original Salt Cave report, the classification systems used had to fulfill certain criteria. The systems had to be constructed with well-defined and consistent criteria. In addition, the classification systems had to have been used extensively, that is, recognized by other researchers in the region as useful in separating temporal and/or spatial units, or the systems must have been developed by a research project to potentially identify ethnic groups.

Five artifact categories present in the Gehr and Jensen collections include groundstone, ceramic, bone/antler, shell and flaked stone. Analyzed artifacts come from 28 of the 45 prehistoric sites within Upper Klamath River Canyon. Basketry, found within the Salt Cave collections, represents the only significant category not found in the Gehr and Jensen collections. In the University of Oregon collections, basketry is found only as impressions in accidently fired pieces of clay . Its lack within the Gehr and Jensen collections may be due to field and laboratory techniques. Unless all amorphous lumps of clay are collected from an archaeological site and then processed so their surfaces are clearly visible, it is not likely that basketry impressions will be discovered. There are no amorphous pieces of clay in either of the recently curated Upper Klamath River Canyon collections. From the fieldnotes which accompany these two collections, it is not certain such clay material was collected in the field and processed in the lab.

Ground Stone

Artifacts of pecked, ground and carved stone totaling 57 whole and fragmentary pieces have been recovered from a total of twelve sites. These include mullers, millingstones, pestles, hopper mortar bases.

basalt bowls, portable mortars, hammerstones, rubbing stones, net sinkers, a steatite ornament, a possible stone bead and groundstone tool fragments. With the exception of net sinkers, all of these artifact classes are present in the Salt Cave Project collections. Though present within the earlier Salt Cave Project collections, shaft smoothers have not been recovered by Gehr and Jensen .

Mullers are the most common groundstone tool recovered. The sixteen mullers, 13 from the Jensen Collection and three from the Gehr Collection, do not indicate their relative abundance within Upper Klamath River Canyon sites. The field reconnaissance completed in July 1989 made it clear that mullers and millingstones, both whole and more commonly fragmentary were common on the surface of many of the prehistoric sites in the canyon, particularly housepit villages. Broken mullers and millingstones apparently were not collected from the surface of these sites, unlike projectile points and other formed artifacts (Gehr 1986a:4-79). The lower count of these artifacts relative to flaked stone tools might give the impression that plant food processing was of relatively little significance to the prehistoric inhabitants. Clearly, their abundance on the surface of many of the Upper Klamath River Canyon sites indicates the importance of plant foods to the diets of the prehistoric inhabitants in the canyon.

From these two most recent collections, the mullers fit within five of the six classes of mullers described by Mack for the Salt Cave Locality (1983: 59-60); only Class 4 is not present in the Gehr and Jensen collections. Class 1, naturally shaped river cobbles, have sometimes been modified by grinding. They can show uniface or biface use and are usually of fine grained volcanic rock. Class 2 specimens show bifacial use and are shaped to some degree, being sub-rectangular in profile. Class 3 mullers may be biface or uniface, being at least partially shaped and sub-rectangular in profile. Class 5 are all shouldered, unifacial mullers, usually made of a coarse material such as volcanic sandstone. Class 6 resemble the various shaped, specialized mullers recorded by ethnographers and archaeologists for Klamath, Modoc and some Shasta villages. The specific attributes of these classes of mullers can be found in Appendix B. Refer to Table 1 for the number and types of mullers from each site.

The millingstones from the two collections are all the slab type, by

TABLE 1: GROUND STONE ARTIFACTS

	MULLERS					MILLINGSTONES		
	Class 1	Class 2	Class 3	Class 5	Class 6	Unidentified Fragments	Slabs	Blocks
35KL16								
Midden			1				3	
H.P. 14	6		1	2	1	2	3	
H.P. 19								
TOTAL	6		2	2	1	2	6	
35KL18								
35KL19								
35KL20		1						
35KL23								
35KL25								
35KL26					1			
35KL552								
35KL554								
35KL576								
35KL578			1					
35KL634								
TOTAL	6	1	3	2	2	2	6	

	Fragmentary Groundstone	Pestles	Portable Mortar	Bowl	Hopper Mortar	HAR	Steatite Ornam.	Net Weight
35KL16								
Midden	4	3			1	1		
H.P. 14	4	1				4		1
H.P. 19								
TOTAL	8	4			1	5		1
35KL18						1		
35KL19					1			
35KL20						2		
35KL23			1					
35KL25			1				1	
35KL26								
35KL552						1		1
35KL554		1						
35KL576				1				
35KL578	1			1		1		1
35KL634					1			
TOTAL	9	5	2	2	3	10	1	3

definition less than 5.0 cm thick, recovered by Jensen's excavations in 1986. Gehr did not collect millingstones but notes in his report they had been observed at eight sites in the canyon (Gehr 1986a:4-79). The block type, which are over 5.0 cm thick are not present in the Jensen Collection.

The lower number of pestles and stone mortars and bowls compared to the number of mullers and millingstones in the two collections mirrors the larger Salt Cave Project collections. Only five pestle and pestle fragments have been recovered, most from 35KL16, and only seven mortars and bowls. As previously noted (Mack 1983: 66-67), it can be difficult to distinguish between portable stone mortars and stone bowls. To be considered a bowl, the artifact must be less than 5.5 cm thick, have a convex base with no sudden thickening toward the base. Using these criteria results in the recategorization of two portable mortars and two stone bowls. Three hopper mortar bases are also in the more recent collections.

HAR Stones are the second most common category of ground stone artifacts in these collections. This category lumps together hammerstones, anvils and rubbing stones, following Trygg (1971). A specimen is included in this category if there is any surface which clearly is battered, irregularly rubbed, pitted or any combination of these. Most of the ten artifacts from this category show some degree of battering, though some specimens with rubbing and/or pecking have been noted. Burnside and Cannon (personal communication, 1989) have observed a number of HAR Stones on the surface of sites previously surface collected, indicating their total numbers in the present collections likely do not represent a proportional sample.

Polished stone in these two collections is represented by a single piece of carved and polished steatite, which may be a ring or other type of ornament, recovered from 35KL25. A possible stone bead from the Gehr Collection seems to be a small rock with a natural hole near one end which may have been used as an ornament; it was recovered from the surface of 35KL18.

Net weights or net sinkers have been recovered from three sites: 35KL16, 35KL552, and 35KL578. These are all small to medium size rocks which have a groove pecked around the center of the rock. Net sinkers were not recovered during the earlier Salt Cave Project, though they were expected to be found in prehistoric sites from Upper Klamath River Canyon as they are known from prehistoric sites within the Klamath Basin and further downstream on the Klamath River (Leonhardy 1961; Trygg 1971).

Ceramics

Very few ceramics exist in the Gehr and Jensen collections. One sherd of Siskiyou Utility Ware was recovered from a shovel test at 35KL578. Three cylindrical figurine fragments were recovered from test units at 35KL25. Jensen observed one sherd resembling Siskiyou Utility Ware on the surface of an unexcavated housepit at 35KL16. Siskiyou Utility Ware was first described and named from the Salt Cave Project collections (Mack 1983). It has been described as a crude, light-brown pottery occasionally decorated with fingernail incisions around the inner rims of open, wide-mouth shallow bowls. None of the sherds recovered from the Klamath River drainage have been decorated. Though Gehr reports three sherds from 35KL578, the three fit together to form a single, small body sherd. The sherd has a surface color of reddish brown 5YR 5/5 on the Munsell Soil Color Chart and a core color of red 2.5YR 5/6. It has a grainy surface texture which is untreated and undecorated, with a dull luster and was 3.5 on the Moh Hardness Scale. It fits well within the examples of Siskiyou Utility Ware previously recovered from prehistoric sites in the canyon. The three figurine fragments also strongly resembles the cylindrical figurine fragments previously known from sites within the Salt Cave Locality (Mack 1983). They are similar in their characteristics to the sherds except their surface color runs from a light brown to pink 7.5YR 6/4 and 8/4.

Bone/Antler and Shell

Antler, bone and shell artifacts are not well represented within the Jensen Collection and are relatively uncommon in the Gehr Collection. Much of the bone and antler artifacts are merely fragments too small to classify or to determine their possible function. Of the five bone tools recovered by Jensen at 35KL16, three are fragments. One of the two classifiable bone tools recovered from Housepit 14, is a shoehorn shaped object, used most likely as a sweat scraper, lice-killer or spoon, [Class N2 in Gifford's (1940: 161-167, 215) bone tool classification]. These tools have convex working edges and the entire tool is shaped and polished. This specimen is a tip fragment. The other tool is a bone wedge, Class D6. This class has a broad working edge, often made from metacarpals of artiodactyls. The Gehr Collection also has many fragments of bone tools, including several classifiable bone tools. The majority of these can be characterized as barbs and gigs for fishhooks and harpoons. Earlier collections from Upper Klamath River Canyon contains several such tools. Table 2 tabulates the number and types of bone tools in each site. The fish barbs and gigs all fall within five major bone tool classes from Gifford's and Bennyhoff's (1950) schemes. The represented classes include Classes T1h and T2a, described as bipointed objects, whether straight, bowed or beveled, which are not perforated. All specimens are highly polished on at least one surface. Classes U1a and U1b are pointed, blunt-based objects; all are flattened or grooved on one surface. Class MM is represented by a fragment which is too small to classify beyond the general class level. All specimens within Class MM must be shaped and smoothed with a groove on one surface and a shouldered base.

The single shell artifact, an Olivella Small Ring Bead (Bennyhoff and Hughes 1987), was recovered from 35KL20. It is a very small, thin shell bead, 4.0 mm in diameter and 0.8 mm thick, slightly bowed in profile. The hole takes up almost half of the diameter of the bead (Figure 2a).

Flaked Stone

Flaked stone tools are the most abundant tool category in both the Gehr and Jensen collections. They were also the most common tools recovered in the previous archaeological work within the Upper Klamath River Canyon. Only debitage specimens outnumber flaked stone tools in all three collections. Much of the material can be characterized as unifacial- used or minimally worked flakes. The remainder of the flaked stone, aside from cores, have been more extensively worked into various tool forms. These tools are grouped in this analysis into primarily functional categories, the definition of which considers size, weight, shape of the whole tool and shape of the working edge. A binocular dissection scope was used to examine the edges of most tools to confirm their categorization. Nine tool categories used include projectile points, unifacially flaked tools, scrapers, drills, gravers, knives, bifacial blanks, cores and choppers.

These categories are somewhat different from those used by Gehr and Jensen; consequently, their collections were recategorized for this analysis. In addition, the criteria they used for their categories occasionally differed from those used here, so tools found in their knife category might be placed with knife, unifacially flaked tool or scraper in this analysis. Examination of their collections also resulted in several

TABLE 2: BONE TOOLS

	CLASS										Unclassifiable Tool	
	Ale	Ald	C	D6	N2	Tlh	T2a	Ula	Ulb	MM	Fragments	Total
35KL16												
Midden											2	2
H.P. 14				1	1						1	3
TOTAL				1	1						3	5
35KL18											3	3
35KL19											4	4
35KL25	1	1	1				1		1		1	6
35KL26								1				1
35KL576										1		1
35KL578						1						1
TOTAL	1	1	1	1	1	1	1	1	1	1	11	21

items in Jensen's Waste Flake category to be recategorized as tool fragments and unifacially flaked tools, and items from Gehr's Utilized Flake category to be categorized as debitage. Therefore the original counts for specific categories of tools and debitage from the two collections are not comparable to the counts of the same material in this analysis. This recategorization does not necessarily imply a more accurate functional assessment of the tools in this analysis; it merely allows for a more direct comparison of the flaked stone artifacts from all three major collections of the Upper Klamath River Canyon.

A total of 95 typeable projectile points came from the 1984-1986 seasons. A flaked stone tool is categorized as a projectile point if it is bifacially flaked with fairly even margins and at least one pointed end. It also can be no more than 80mm long and no more than 9mm thick. If any doubt exists, the specimen is categorized as a bifacial blank or knife. With just a few exceptions the projectile points represent known types. The projectile points were typed by first rough-sorting them into groups and then checking them against the criteria used for the projectile point typology from Mack (1983) which was partially based on Thomas' key (1970:44-46) and projectile point type definitions used within the Great Basin and northern California (Baumhoff and Byrne 1959; Bedwell 1973; Cole 1968; Hester 1973). Of the thirty projectile point types found in Mack (1983), 14 are not represented within the Gehr and Jensen collections. The most common point type, the Gunther Barbed, includs almost a third of the typeable points. The other fairly common types are Gunther Stemmed, Desert Side-Notched and the Rosegate Series. Table 3 lists the number of each type in each site. The attributes used for the projectile point typology are presented in Appendix C.

Unifacially flaked tools include those artifacts with working edges formed by intentional or use flaking on one surface only. There are 562 tools within this category. The category divides into five classes based on the character of the working edge, as modified from Pettigrew (1975). The classification uses the configuration of the flaked edges. There are five categories listed within Table 4. Because a single artifact will often have multiple worked edges, the totals in Table 4 represent the number of working edges not the number of artifacts. This tool category does not equate with possible function. Without microscopic edgewear analysis it is not possible to determine the function of most tools, though the

TABLE 3: PROJECTILE POINT DISTRIBUTION

	TYPES											
	GB 1	RSC 2	RSCN 3	DSN 4	EGE 5	EGS 6	SVS 7	CT 8	CB 9	GS 10	AS 11	RSSN 12
35KL16 Midden	3	1								1		
35KL16 H.P. 14 0-5 cm	3			1				1				
35KL16 H.P. 14 5-15 cm	1	2	1					1				
35KL16 H.P. 14 15-25 cm	5			1				1				
35KL16 H.P. 14 25-35 cm	3											
35KL16 H.P. 14 35-45 cm	1											
35KL16 H.P. 19	2											
35KL18 Midden		2	1							1		
35KL19	2		2	4						1		
35KL20			1									
35KL21	1									1		
35KL22	1											
35KL25	2	2								2		1
35KL26	2	1		1								
35KL551				1								1
35KL552												
35KL554	1		2		1					2		
35KL555												
35KL578	1			1						1		
CASIS1198		1								1		
35KL629			2	2						2		
35KL633	1									1		
CASIS16	1											
TOTAL	30	9	9	11	1			3		13		2

TABLE 3: PROJECTILE POINT DISTRIBUTION, CONTINUED

	TYPES									
	ECN 13	EE 14	ESN 15	NSN 16	BRCB 17	HCBA 18	19	20	21	GHL 22
35KL16 Midden										
35KL16 H.P. 14 0-5 cm										
35KL16 H.P. 14 5-15 cm										
35KL16 H.P. 14 15-25 cm										
35KL16 H.P. 14 25-35 cm										
35KL16 H.P. 14 35-45 cm										
35KL16 H.P. 19										
35KL18 Midden										
35KL19	1									1
35KL20										1
35KL21										
35KL22										
35KL25				2						
35KL26										
35KL 551										
35KL552										
35KL554	1									
35KL555										
35KL578										
CASIS1198										
35KL629	1									
35KL633										
CASIS16										
TOTAL	3			2						2

TABLE 3: PROJECTILE POINT DISTRIBUTION, CONTINUED

	TYPES								
			SSN		SS	BLCN	MCN	E	
	23	24	25	26	27	28	29	30	Total
35KL16 Midden									5
35KL16 H.P. 14 0-5 cm									5
35KL16 H.P. 14 5-15 cm		2				1			8
35KL16 H.P. 14 15-25 cm									7
35KL16 H.P. 14 25-35 cm									3
35KL16 H.P. 14 35-45 cm									1
35KL16 H.P. 19									2
35KL18 Midden									5
35KL19				1					12
35KL20									1
35KL21									2
35KL22									1
35KL25			2						11
35KL26				1					5
35KL 551									2
35KL552				1					1
35KL554									7
35KL555			1						1
35KL578						1			4
CASIS1198									2
35KL629							1		8
35KL633									2
CASIS16				1					
TOTAL		2	3	4		2	1		97

TABLE 4: UNIFACIAL FLAKED TOOLS: WORKED OR USED EDGES

	INCURVATE	STRAIGHT	EXCURVATE	POINTED	SINGLE NOTCH	DOUBLE NOTCH	MATERIAL CHERT	OBS	BAS.
35KL16 Midden	1	11	4	1	2		7	8	
35KL16 H.P. 14	29	48	52	11	4		56	59	2
35KL16 H.P. 19	1		4				3	1	1
35KL16 Total	31	59	60	12	6		66	68	3
35KL18	8	7	15	3	1		12	16	1
35KL19	39	31	44	25	7	1	37	76	6
35KL20	10	7	18	7	6		9	27	1
35KL22			1				1		
35KL25	19	22	34	13	9		35	32	3
35KL26	11	11	12	10	4		11	25	1
35KL550	1	1	1					1	1
35KL551	3		3	2	1			2	5
35KL552	1	4	10					8	2
35KL554	11	17	30	13	4		13	48	2
35KL567	2		4	1	2		4	4	
35KL576		2	1		1			2	
35KL578	11	5	15	4	10		9	18	
CASIS1198			5	1	1		2	4	
35KL629	3	5	7	6	1		6	11	
35KL631	1		1	1				2	
35KL633	1				1			1	
35KL635		2	1				2		
CASIS16	1	3	3	1			1	4	1
TOTAL	153**	176**	265**	99**	54**	1**	218*	346*	19*

* Number of tools.

** Number of worked or used edges, not whole tools.

TABLE 5: CORES

	BASALT	CRYPTOCRYSTALLINE	OBSIDIAN
35KL16 Midden		2	1
35KL16 H.P. 14	6	4	
35KL16 H.P. 19			
TOTAL 35KL16	6	6	1
35KL18		2	
35KL19	1	1	1
35KL25		11	
35KL26		3	
35KL551		1	1
35KL552		9	
35KL554		3	1
35KL634	1	1	
35KL635		6	
CASIS1198			1
CASIS16	1		
TOTAL	9	43	5

configuration of the working edge may allow an educated guess as to a particular tool's function. The pointed flakes may have been used as awls for piercing tough or thick skins, as Semenov (1973) suggested for similar tools, or they may have been used to incise bone. The notched flakes could have several possible functions: shavers on objects with a circular cross-section, saws or knives. The various edged flakes are likely used as knives. As Semenov's (1973) study suggests the working edge of meat knives, whittling knives and fish scaling knives can be excurvate, incurvate or straight. Some excurvate edge flakes may also serve as scrapers. Both excurvate and straight edge flakes are the most commonly used within the Upper Klamath River Canyon sites, with pointed and incurvate edged tools also frequently present. Notched edges are low in frequency with the exception of a few sites.

Basalt, cryptocrystalline and obsidian cores are present in both the Gehr and Jensen collections. Most are multiple platform cores. Table 5 lists the number and the material of the cores by site. A few core fragments have been noted within the waste flake and debitage of the two collections. Chert cores outnumber obsidian cores seven to one.

Chert is also the most frequently used material for scrapers within these two collections. A tool is a scraper if it has a steep-angled retouched working edge, of at least 30'. Most specimens are plano-convex, but there are also a few bifacially flaked specimens. The scraper typology uses the position of the worked edge and its shape, a typology based upon one devised by Fagan (1974). All side scrapers fall within Type A, all end scrapers within Type B, oval scrapers within C, and combination scrapers within Type F . The number following the letter designates the shape of the working edge in profile. Table 6 gives the numbers and distribution of the types by site. Type A2, straight side-scrapers, are the most common within the two collections.

Drills have been recovered from just eight of the tested sites during the 1984-1986 seasons (Table 7). Gravers are somewhat more common, being recovered from thirteen of the sites. Drills and gravers are those tools with sharp projections which could be used to engrave, bore, drill, incise or score. Drills separate from gravers by their diamond-shaped cross-sections, which contrast with the triangular, rectangular and oval cross-sections of gravers. The drills are divided into categories based upon two criteria: 1) shape of the drill base and 2)length of the bit. All

TABLE 6: SCRAPERS

	TYPES							MATERIALS				
	A2	A3	B?	B3	C3	F1	F3	BASALT	CCS	OBSIDIAN	Argillite	Glass
35KL16												
MIDDEN		1							1			
H.P. 14	3	2							3	2		
H.P. 19	1				1				1	1		
TOTAL	4	3			1				5	3		
35KL18	1								1			
35KL19	3		1	2		1			3	3		1
35KL20	1								1			
35KL25	7		1				1		5	4		
35KL26	1											
35KL551		1		1			1		1	2		
35KL552		2							2			
35KL554		1					1		1	1		
35KL567	1	2							1	2		
35KL578	4	3						1	3	3		
CASIS1198	1			1					1		1	
35KL629	1	2		2			2		4	3		
35KL631		1		1			1	1	2			
35KL633				1			1		2			
35KL635	1			1					2			
TOTAL	25	15	2	9	1	1	7	2	35	21	1	1

TABLE 7: DRILLS

	TYPES							MATERIALS	
	A1	Ab	A2a	A2b	A2c	Bb	Undetermined	CCS	Obsidian
35KL16									
H.P.14					1				1
35KL19			1			2		1	2
35KL25					1			1	
35KL554		1							1
35KL578	1						1	1	1
35KL629				1			1	1	1
35KL633				1				1	
TOTAL	1	1	1	2	2	2	2	5	6

drills with expanding bases are categorized as group A. They are further divided by separating oval from angular shapes. Category B comprise drills with key or T-shaped bases. Gravers are not subdivided in this study, as a previously devised scheme for gravers has not produced useful results (Mack 1983). As in the Salt Cave Project collections, most gravers are made of obsidian, while drills are almost equally CCS and obsidian (Table 8).

An artifact is considered a knife if it has a sharp cutting edge, with an edge angle of less than 30'. Most edges are bifacially worked , though a few are unifacial. Most knives are shaped, and obsidian is the most commonly used material. Knives are divided into nine types as in Mack (1983: 201); only Type 2, stemmed bifaces, are not represented in these two collections. The shape of the knife is the most important attribute for determining types, with the exception of Type 1, vein chalcedony knives, and Type 9, flake knives. The criteria for each knife type can be found in Appendix D. Table 9 gives the numbers of knives for each type from each site.

The newly defined McKee Uniface is another flaked stone tool which must be noted. It was first defined by Martin Baumhoff (1982); however, there was no consensus as to its function though it had often been classified as a projectile point (Henn 1986). Originally, the specimens from the Upper Klamath River Canyon sites were classified by Mack (1979, 1983) as scrapers and gravers and not recognized as a unique tool type. Upon recategorization of the Gehr and Jensen Collections and a reanalysis of the scrapers and gravers from the Salt Cave collections, this type was recognized within 35KL18 and 35KL19. All four specimens from the Salt Cave collections came from 35KL18, Big Boulder Village. The single example from the Gehr Collections came from 35KL19. The McKee Uniface may be used as a time marker in northern California, being restricted in age to around 3500 B.P. (Henn 1986).

Distributional Analysis

In past investigations of the prehistory of the Upper Klamath River Canyon the presence and frequency of certain artifact types has been used to contribute to an understanding of the chronology of the canyon and to hypothesize site function, possible ethnic identification, and influences from surrounding areas. The distribution of certain artifact types has been thought to be significant particularly with regard to the

TABLE 8: GRAVERS

	OBSIDIAN	CCS
35KL16		
Midden	1	2
H.P. 14	2	2
H.P. 19		1
TOTAL	3	5
35KL18	2	
35KL19	10	7
35KL20	4	
35KL21	1	
35KL25	4	1
35KL26	3	2
35KL551	1	
35KL552		1
35KL554	2	
35KL578		1
35KL629	1	
35KL631	1	
TOTAL	32	17

TABLE 9: KNIVES

	TYPE 1	TYPE 2	TYPE 3	TYPE 4	TYPE 5	TYPE 6	TYPE 7	TYPE 8	TYPE 9
35KL16									
Midden			1				1	1	1
H.P. 14	2		1			1		1	
H.P. 19							1		
TOTAL	2		2			1	2	2	1
35KL18								1	
35KL19			2	2		1	2	1	2
35KL20				1					
35KL21									
35KL22									1
35KL23									2
35KL25			1				1		1
35KL26	1						1		1
35KL551							2		
35KL552	2								2
35KL554			1				2		
35KL567			1						
35KL578			1						
35KL629			3						
35KL634					1				2
35KL635								2	
TOTAL	5		11	3	1	2	10	6	12

hypothesized differences between the upriver and downriver site clusters (Gehr 1986b; Mack 1983). Tool type differences have also been used by Mack (1983) to separate possible Late Prehistoric assemblages at 35KL16 and 35KL18 from the assemblages at 35KL21, the midden at 35KL18 and possibly the midden from 35KL16, which seemed from the limited number of radiocarbon dates and time sensitive artifacts; to be older. Differences in site function have also been proposed, particularly by Gehr (1986b), based upon the frequency of certain artifact groups. Jensen used the the presence or absence of certain stone tools and faunal remains to hypothesize possible ethnic affiliations within the Late Prehistoric of 35KL16 and possible changes in subsistence and settlement patterns within the canyon during the Late Prehistoric Period. The distribution of several categories of artifacts described above will be useful in evaluation of the various hypotheses proposed in the past.

Among ground stone artifacts mullers, portable stone mortars and HAR stones distributions had seemed significant to Mack (1983). Muller Type 6, the developmental muller with clear ties to the Klamath Basin (Cressman 1956), had been limited in distribution within the Salt Caves collections to the upriver sites, 35KL18 and 35KL22. It is now apparent this type's distribution included the downriver sites as well. Jensen recovered an example of Type 6 from Housepit 14 at 35KL16 and Gehr recovered an example from 35KL26. The presence of portable stone mortars only within the upriver sites from the Salt Cave collections and their complete absence from 35KL16 also seemed a significant difference to Mack (1983); however, Gehr recovered a portable stone mortar at 35KL25, a downriver site, which extended the distribution to both the upriver and downriver site clusters.

The distribution of small, globular HAR stones and slightly shouldered and shouldered uniface mullers may have diagnostic potential. Mack (1983) notes a higher frequency of small, globular HAR stones within the upriver sites; this distribution also exists within the Gehr and Jensen collections. In addition, it has been noted (Mack 1983) that slightly shouldered and shouldered uniface mullers are much more frequent within the upriver sites as are unshouldered bifacial mullers. The downriver site have primarily slightly shouldered and unshouldered mullers. This distribution is also mirrored within the Gehr and Jensen collections. It has also been noted by Mack (1983: 76) that the mullers and millingstones within 35KL16 are primarily fragments, whereas mullers and millingstones are much less fragmented within the upriver sites. This distinction between 35KL16 and the upriver sites continues to be present within the Gehr and Jensen collections.

The distribution of ground stone artifact types now seems somewhat less significant than it did. There may well be a distinction between the upriver and downriver site clusters in terms of frequency of the small, HAR stones and shouldered, uniface mullers; further excavations of sites within the downriver cluster and upriver cluster may confirm this possible distribution difference. In addition, excavation of confirmed Modoc, Klamath and Shasta sites would be needed to test Trygg's (1971) hypothesis that Modoc sites should have a higher distribution of small, globular HAR stones and shouldered uniface mullers.

The originally observed distribution of ceramics within the Upper Klamath River Canyon has not greatly changed with the anaylsis of the Gehr and Jensen collections. One sherd of Siskiyou Utility Ware has been recovered from 35KL578. This single sherd indicates a possiblity of further finds of the pottery within the upriver site cluster, but does not necessarily indicate this pottery to be associated with these sites. The large number of sherds recovered in 1963 from 35KL16, over 300, still associates Siskiyou Utility Ware primarily with the downstream site cluster. The three figurine fragments recovered by Gehr all come from 35KL25, a downriver site. It is not uncommon for figurine fragments to be associated with Siskiyou Utility Ware (Mack 1986), but figurine fragments frequently exist in sites with no evidence of pottery (Mack 1990) within the Western Cascades of southern Oregon and northern California.

It seems odd that the Jensen Collection contains no ceramics, since his excavations were concentrated within 35KL16. Because Siskiyou Utility Ware can be very difficult to recognize, it may have been present within Housepit 14 and been missed. Also, only half of the house was excavated; it is possible pot sherds if unevenly distributed within the house remain unexcavated. Jensen did observe a sherd on the surface of an adjacent housepit (Jensen 1987). The results of the archaeological work within Upper Klamath River Canyon still indicate Siskiyou Utility Ware associated with the single downriver site, 35KL16, and figurine fragments being more widely distributed within both upriver and downriver sites. There remains a possiblility that Siskiyou Utility Ware would also be recovered from other canyon sites upon further excavation, particularly of housepits.

Very few bone, antler and shell artifacts have been recovered in the 1984-1986 seasons. Only two classifiable bone tools are noted from the Jensen Collection, both were recovered from Housepit 14: a shoehorn shaped object, Class N2, and a bone wedge, Class D6. The bone wedge is associated with woodworking and is not unexpected within a housepit. Several bone and antler wedges have been recovered from Upper Klamath River Canyon sites during the 1961-1963 seasons. The Gehr Collection contains several awls in addition to barbs and gigs for fishing. The distribution of the fishing implements includes both downriver and upriver sites and sites on the river and those from higher terraces. This broad distribution indicates fishing as an important subsistence activity for all the inhabitants of the project area (Table 2).

The single shell bead recovered by Gehr from 35KL20 of the upriver site cluster parallels previous results. A few shell beads and pendants were recovered from 35KL21, adjacent to 35KL20, during the earlier University of Oregon excavations. Shell beads have been traded into the area presumably from further downriver, though their apparent clustering in the canyon on the north side of the river within the upriver cluster may indicate another source. The sample is too small, however, to make even tentative speculations.

The sample of flaked stone tools has been large for all the collections leading to the use of their distribution as evidence for several hypotheses and also for chronological placement of sites, as some of the types can be used as time markers. Among the projectile points the Gunther Barbed type overwelmingly dominates the collections and has the highest frequency within the downriver sites, particularly 35KL16. The projectile point type next highest in frequency is the Gunther Stemmed, followed closely by Desert Side-Notched and two Rose Spring Series types: Rose Spring Contracting Stem and Rose Spring Corner-Notched. All these point types are time markers for the Late Prehistoric Period and are found in all the sites within the Upper Klamath River Canyon. All other point types are found in much lower frequency.

The influence from the Northern Great Basin upon the Upper Klamath River Canyon is evident in the distribution of the projectile points; many of the common types are present, though in relatively low numbers, such as the Elko Series, Cottonwood Series, and Northern Side-Notched. Influences from the west, northwest California and southwest Oregon may be represented by the presence of Gold Hill Leaf points, Class 28 (Mack 1983) which seem similar to Borax Lake Corner-Notched or Clikapudi Corner-Notched points, and Siskiyou Side-Notched. These types cannot be associated with any particular ethnic or linguistic group but just to a general region. The McKee Uniface also indicates influence or ties to northwest California. It has been found in only two sites within the Upper Klamath River Canyon, both adjacent to each other in the upstream cluster on the south side of the river: 35KL18 and 35KL19.

The distribution of the different categories of unifacial flaked tools is relatively uniform from site to site with a few notable exceptions. Excurvate edge tools are the most common type in the canyon and are the most common in all but three sites: 35KL576, 35KL633, 35KL635. These three have so few recovered artifacts that the samples are too small to indicate any significant trends. Straight edge tools are just a bit less common than the excurvate edge tools in most sites.

The distribution of pointed and notched tools is not uniform throughout the canyon. There is a significantly higher frequency of pointed unifacial flaked tools in 35KL19, 35KL26 and 35KL629. South Frain Field, 35KL19, also has a high frequency of gravers and drills, indicating the inhabitants at this site, and perhaps also at 35KL26 and 35KL629, spent significant time boring or engraving bone or other materials. There is a significantly higher number of notched unifacial flaked tools in 35KL578, which also has a fairly high frequency of incurvate edged tools. Since notched tools have been associated with the shaping of cylindrical objects, often of wood or bone, and incurvate edge tools may also be used in similar tasks (Semenov 1973), the inhabitants of this site may have spent considerable time manufacturing bone or wooden tools.

Scrapers have been recovered from almost all the tested and excavated sites within the Upper Klamath River Canyon. Side scrapers are the most common type, particularly those with straight working edges. End scrapers are less abundant. This reverses the scraper type frequencies which are noted in the Salt Cave collections, where convex edge, end-scrapers are the most common and Type A2 scrapers are most frequently recovered from 35KL16. Five of the 16 sites with scrapers have over half the total number: 35KL16, 35KL19, 35KL25, 35KL578 and 35KL629.

Drills have been recovered from only seven sites (Table 7). All but two of the nine typeable drills are the expanding base type. The other two are Type Bb, Key or T-shaped base drills. One has been recovered from 35KL578 and one from 35KL629. This drill type indicates influence from the Northern Great Basin (Mack 1983: 191). Gravers are much more common; they have been recovered from thirteen canyon sites (Table 8). One site 35KL19 has over half of the total number recovered, and also has a large number of pointed unifacial flaked tools, as noted above.

Knives are also found in almost all the tested and excavated sites. Types 3, 7 and 9 are equally common and are found in almost every site (Table 9). Type 1, vein chalcedony knives, which appears to be restricted to Late Prehistoric Period sites (Mack 1983: 201, 206) have been recovered from three sites, 35KL16, 35KL26 and 35KL552. That these are all downriver sites is not significant, since this knife type was also recovered from 35KL18 during the 1961-1962 seasons. All four of these sites are house pit villages.

The distribution of the material used for the manufacture of flaked stone tools has also been noted (Mack 1983; Gehr 1986b). In general, for all tool categories obsidian is the most commonly used material, particularly within the upriver sites. Cryptocrystalline (CCS) increases in frequency within the downriver sites; however, obsidian is still most frequently used for projectile points, unifacial flaked tools, and gravers. Scrapers and cores are the only two categories of tools which are more frequently made of CCS when all the Upper Klamath River Canyon sites within the Gehr and Jensen collections are considered as a unit. Fifty-eight percent of the scrapers are CCS and 75 percent of the cores are of CCS. The seeming anomaly of an overwelming presence of CCS cores coupled with a majority of obsidian tools can be explained. The downstream cluster of sites in the Upper Klamath River Canyon include a chert quarry, making it readily accessible. In contrast, the obsidian must be brought from some distance or acquired through trade, making it a more scarse commodity. The obsidian probably did not often enter the canyon in the shape of cores, but rather as tool blanks and flakes. Few obsidian cores have been recovered from canyon sites and the obsidian debitage from the canyon weighs less though it has the highest frequency, indicating smaller obsidian flake size (Mack 1983: 129). The chert, in contrast, probably entered the sites as cores, whether acquired through trade or travel to the quarry, since no site within the canyon is more than a few kilometers from the chert quarry. In addition, some CCS materials are available as cobbles from the river.

FAUNAL REMAINS

The faunal remains from the Gehr and Jensen collections were also part of the analysis for this project. The faunal material from the Gehr Collection had not been classified, so this constituted the first step of the analysis. In addition, the examination of the unidentifiable bone from the Jensen Collection led to some additional classifications. The faunal material was first sorted into two categories: identifiable and unidentifiable. To be considered identifiable a bone required some portion of the epitheses, a muscle attachment scar or foramen, if not a complete bone. Those potentially identifiable bones were then sorted into probable categories of fish, bird, reptile and mammal. The mammal was further divided by size into small, medium-small, medium, medium-large and large. The collection was then taken to the Museum of Vertebrate Zoology at the University of California, Berkeley, so individual bones might be compared to bones of known species. Some of the identifiable bone could only be assigned to class or family, but many of the bones were identifiable to genus and species. Tables 10 and 11 give the counts of the faunal collections by site. As with the Salt Cave collection (Mack 1983), the majority of the bone is from large mammal, artiodactyl. Deer (*Odocoileus sp.*) is the most common mammal identifiable to genus level; the second most common mammal is the ground squirrel (*Spermophilus beecheyi*). Western Pond Turtle (*Clemmys marmorata*) is the third most common animal identified. There are also a few fish bones from *Catostomus sp.* and bones from several different carnivores, particularly mustelids.

The faunal remains recovered from the sites indicate which animals were important to the inhabitants of Upper Klamath River Canyon, though the presence of a particular species of animal within an archaeological site does not necessarily imply its use as food, clothing or tools (Ziegler 1973). For example, the ground squirrel bones in these sites likely represent the natural death of these animals within their burrows in the sites. Many of the *Spermophilus* bones are articulated and none show evidence of human use such as charring or breaking. The artiodactyl, deer and elk, are probably the most important food mammals within all the sites. The deer bone is always broken up and split. They often have chopping or

TABLE 10: GEHR FAUNAL COLLECTION

	SITE 35KL18	35KL19	35KL20	35KL21	35KL22	35KL23	35KL25	35KL26	35KL552	35KL554	35KL567	35KL576	35KL578	35KL629	Total
Fish													1		1
Catostomas sp.				1											1
Reptile															
Clemmys mormorata	4	5	1				9								19
Bird	3												1		4
Mammal															
Artiodactyl	5	2					13	2	1		1		5	1	30
Cervus canadensis									1	2			2		5
Odocoileus sp.	1									4			2		7
Cervid	1														1
Ursus sp.										1					1
Erethizon dorsatum												1			1
Mustela							1								1
Rodentia		1					2								3
Spermophilus beecheyi	4				1				1				3		9
Spermophilus lateralis								1							1
Microtus sp.													1		1
Mammal--small		1							1	1			2		5
Mammal--small-medium	4	14	1			3	19	1		1					43
Mammal--medium	4	1	1					3							9
Mammal--medium-large	74	28	2	1		10	148	24		6		9	55		357
Mammal--large	51	5				1	133	48	1	21		6	46	4	316
Mammal--indeterminate	69	49			1	2	87	37	1	12		6	28		292
Unidentifiable fragments	83	46	2		1	9	12			8		1	34		197
TOTAL REMAINS	303	152	7	2	3	25	424	116	6	56	1	23	180	5	1304

Table 11: Jensen Faunal Collection 35KL16

	H.P. 14	H.P. 19	MIDDEN	TOTAL
Fish	1			1
Catostomus sp.	4			4
Bird	2			2
Anas platyrhynchos	1			1
Reptile				
Clemmys mormorata	4			4
Mammal				
Cervus canadensis	2			2
Odocoileus sp.	25	1		26
Cervid	9			9
Artiodactyl	22		3	25
Castor canadensis	1			1
Canis latrans/familiaris	1			1
Urocyon cinerargentina	1			1
Mustelidae	1			1
Carnivora	1		1	2
Spermophilus beecheyi	17	1		18
Sciuridae			1	1
Thomomy sp.	1			1
Mammal--small	1			1
Mammal--small-medium	6			6
Mammal--medium	5		1	6
Mammal--medium-large	546		32	578
Mammal--large	245	2	54	301
Mammal--indeterminate	83	1	25	109
Unidentifiable fragments	5	1	3	9
TOTAL FAUNAL REMAINS	984	6	120	1110

cut marks and many pieces are partly burned. The small number of fish bone from the collections may not indicate the relative importance of fish within the diet of the prehistoric people of the canyon. Fish bone is very small and delicate. It also does not preserve well within sites because of its fragile nature. Its recovery from archaeological contexts depends greatly upon the recovery techniques used. It is often lost through 1/4 inch mesh screens, which were used during the 1961-63 excavations and most frequently by Jensen in 1986. In addition, certain species such as salmon have primarily cartilaginous skeletons which quickly disappear, leaving no trace of the use of such fish.

Cultural practices may have also affected the number of fish and other animal bones within a site. This was particularly relevant in this area. It was customary among the Shasta to pound up fish bone into powder, which was stored and later eaten (Holt 1947). Deer bone was processed in a similar way; it was ground into meal and made into cakes to be cooked and eaten, often in soup. This practice had been reported for Klamath, Modoc and Shasta (Dixon 1907; Voegelin 1942; Holt 1947). These facts, along with the high frequency counts of deer bone in all the sites, strongly suggested deer served as a very important part of the diet of the inhabitants of the canyon.

There does not seem to be any significant difference between the faunal collections from the different sites. With the exception of 35KL16, most of the sites have only been tested by Gehr and Jensen and, thus, have very small faunal collections. From what data is avaliable, deer is an important part of the diet in all the sites. Even though fish bone is relatively rare, being present within only three sites from the Gehr and Jensen collections, it is likely careful excavation of any site within the canyon would produce at least a few fish bones. This is supported by the faunal collection from the 1961-1963 Salt Caves collections (Mack 1983: Appendix A).

FIGURE 2

a. Shell Bead, Type G3a
b. Projectile Point Type 24
c. McKee Uniface
d. Gifford's Type C3 Bone Tool
e. Gifford's Type T1h Bone Tool
f. Gifford's Type T2a Bone Tool
g. Gifford's Type U1 Bone Tool
h. Gifford's Type U2 Bone Tool
i. Gifford's Type MM1b Bone Tool

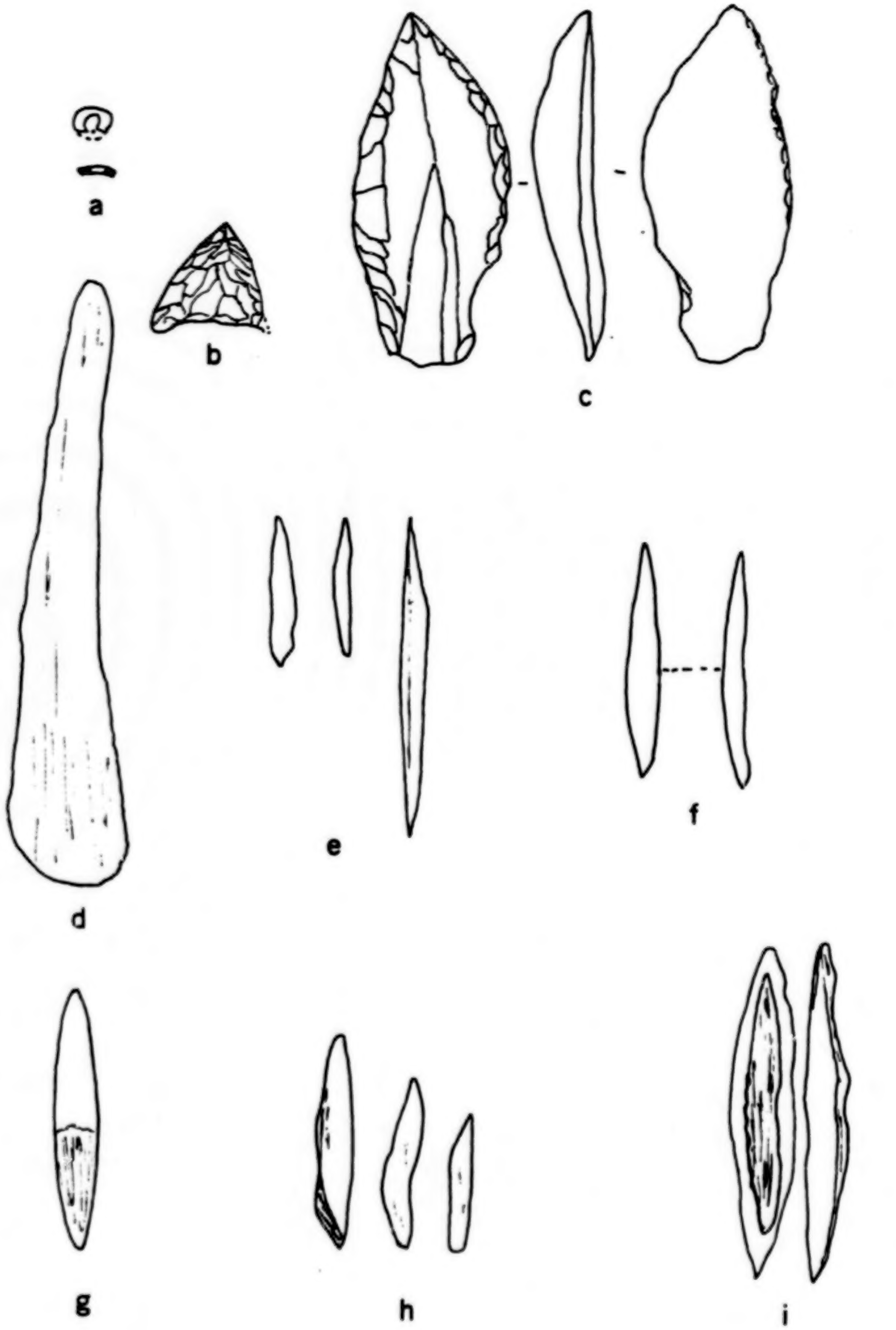

FIGURE 2

CHAPTER 3-SYNTHESIS OF UPPER KLAMATH RIVER CANYON PREHISTORY

The large number of prehistoric archaeological sites within a rather short, narrow stretch of the Klamath River known as the Upper Klamath River Canyon attest to its use for at least 7000 years by people who lived upon its terraces and exploited the various resources the canyon and the river offered. Within the Late Prehistoric Period some of the people who used the canyon's resources lived within the canyon year round in pithouse villages, indicated by the faunal remains and artifact diversity within the village sites; others came for shorter periods of time. During the previous Archaic Period the canyon was probably inhabited seasonally by groups of people who moved regularly throughout a larger area, exploiting the resources of each area when a resource was at its peak. The canyon and its resources were an important part of their seasonal round. During most of the prehistory of the canyon its inhabitants would have had relationships with or would have come from surrounding areas including the Klamath Basin to the east, north-central California to the south and southwest, and southwest Oregon to the northwest. The strength of the ties with these adjacent areas varied in intensity over time. What did not apparently vary to any degree over time were the kinds of resources exploited within the canyon. Equal importance seemed to be given to the gathering of plants, the hunting of mammals and fishing. This was quite clear from the archaeological remains of the Late Prehistoric Period, but there was also evidence of the importance of all these resources during at least the latter part of the Archaic Period.

HYPOTHESES TESTED

Several hypotheses have been proposed by archaeological researchers working with the data recovered from sites within the canyon which leads to a generalized picture of the prehistory of Upper Klamath River Canyon. Mack (1983) proposed four major hypotheses as a result of her analysis of the archaeological data recovered from the canyon during the 1961-1963 seasons by the University of Oregon. These hypotheses dealt both with cultural diversity and subsistence uniformity within the Salt Cave

Locality. Mack suggested the Salt Cave Locality had been highly influenced by cultures of the Northern Great Basin, the northwest California-southwest Oregon coast, north-central California and south-central Oregon west of the Cascades. The Klamath River corridor served as a conduit for the movement of cultural influences, which changed direction and intensity through time. She suggested that a cultural or ethnic boundary existed within the area separating the upriver sites from the downriver sites which seemed to result in a recent prehistoric boundary between the Klamath-Modoc upriver and the Shasta-Takelma downriver. It was also suggested that 35KL16, Border Village, may have been occupied by Takelma during part of the Late Prehistoric Period due to the presence of Siskiyou Utility Ware in the three excavated housepits. Lastly, it was hypothesized the inhabitants of the Salt Cave Locality were generalized hunters and gatherers throughout at least the last 7000 years, giving equal importance to fish, plants and game. The establishment of semi-permanent villages around A.D. 900 did not alter this pattern. All artifact categories and faunal remains contributed to the formation of these hypotheses.

Gehr's (1986a,b) hypotheses center primarily on the differences perceived from his analysis between the upriver sites and the downriver sites. He concentrates upon the recent Late Prehistoric Period data. The differences are based on the proportions of the five tool groups as defined by Gehr (1986b) in the sites. He proposes a difference in site functions. Based also on the information he acquired from a Shasta informant, Anaraiko, he proposes upriver and downriver site clusters. Each cluster is hypothesized to include a main Shasta village, a Shasta burial site, secondary villages and other special purpose sites. Gehr's third major hypothesis relies on the proportion of obsidian to chert recovered as utilized flakes and debitage. He suggests obsidian entered the Upper Klamath River Canyon through one major upriver site, 35KL554 and is distributed downstream from the upriver site cluster. He suggests chert moved upstream from the downstream site cluster, which included a chert quarry site, 35KL630, and a major chert distribution site, 35KL25.

Jensen's hypotheses center on the prehistory of Border Village, 35KL16, and are based primarily on the differences he perceives between the housepit he partially excavated, Housepit 14, and those excavated by the University of Oregon in 1963 (Jensen 1987). He proposes a change in the subsistence pattern and settlement pattern within the Late Prehistoric Period based primarily on the results of the analysis of the materials from Housepit 14. The change proposed is from use of 35KL16 as a winter village with a focused use of regional resources to a year round use of the site with a more generalized use of resources. Jensen also proposes 35KL16 was occupied only from approximately A.D. 1000 to A.D. 1500, and this site did not fall within the core area of any prehistoric or contemporary ethnic group. All three investigators proposes the area of Upper Klamath River Canyon was not occupied on any regular bases after A.D. 1800.

The results from the recategorization of the artifacts and the identification of the faunal remains from all three investigations within the canyon can be used to test these hypotheses, as can the additional radiocarbon dates and the results of other analyses recently completed from the archaeological investigations within the canyon. The results of the more complete survey of the canyon also provide a clearer picture of the extent of the use of Upper Klamath River Canyon. The first hypotheses to be tested concern the chronology within the canyon.

CHRONOLOGY

Mack (1983) proposes the use of the Upper Klamath River Canyon began approximately 7000 years ago and continues until the historic period, the permanent house pit villages being abandoned by A.D. 1600. This idea is based upon the limited number of radiocarbon dates and time markers recovered from the archaeological sites within the canyon. The ethnographic data available also indicates the canyon was not the location of villages of the Shasta, Modoc or Klamath, though ethnographic and historical data indicate use of the canyon by the Klamath and the Shasta (Spier 1930; Davies 1961; Heizer and Hester 1970).

Investigations within the canyonsince 1978 provide additional radiocarbon dates and artifacts useful as time markers requiring some modification of the chronology proposed by Mack (1983). The complete list of radiocarbon dates for the canyon are listed in Table 12. The oldest date remains the 7646 +/- 400 from Stratum I, 35KL21, but the most recent date comes from a housepit at 35KL20, a date of 100 +/- 70. Because the site lacks historical materials, it remains likely that the site was not

TABLE 12:
RADIOCARBON DATES FROM UPPER KLAMATH RIVER CANYON SITES

Site Number	Site Name	Reference	Radiocarbon Dates
35KL20	Klamath Shoal Village	(Gehr 1986a)	100±70, AD 1850
35KL19	Frain South Field	(Gehr 1986a)	210±80, AD 1740 230±60, AD 1720 580±60, AD 1370
35KL26	Men's Ceremonial Area	(Gehr 1986a)	330±60, AD 1620 380±80, AD 1570 400±50, AD 1550
35KL18	Big Boulder Village	(Valastro et al 1967) (Mack 1983)	*564±110, AD 1386
35KL16	Border Village	(Mack 1983) (Jensen 1987)	*580±120, AD 1370 580±100, AD 1370 970±80, AD 980
35KL21	Klamath Shoal Midden	(Mack 1983) (Valastro et al 1967)	*1009±110, AD 941 *1296±125, AD 654 *7646±400, 5696 BC

* Corrected for New Half-life and MASCA Correction Factor

inhabited after the time of Peter S. Ogden's expeditions in 1827. An examination of Table 12 might leave the impression that the canyon was used very early, around 7500 years ago, then abandoned for thousands of years and inhabited again around A.D. 600 until the Historic period. It should be noted, however, these radiocarbon dates come from only six of the 45 prehistoric sites within the canyon. When other time markers are considered this impression is changed (Table 13). The shell beads from 35KL20 and 35KL21 clearly indicate occupation of those sites back to A.D. 100 or even slightly earlier. They include three Olivella Spired Lopped, one Olivella Round Saddle and one Olivella Small Ring, using the bead typology in Bennyhoff and Hughes (1987) rather than the sckeme by Gifford (1947). The Olivella Spired Lopped are not temporally sensitive, but the other two types can be linked to the Middle Period, Early through Late Phases. In addition, several of the projectile point types recovered from various sites within the canyon as a group span the entire 7000 years. Particularly important are the presence of Northern Side-Notched, Humboldt Concave Base A, Gold Hill Leaf and Elko Series points, as together they cover the time span between 5000 B.C. and A.D. 500. The other relevant flaked stone tool, the McKee Uniface, dates to approximately 3000 B.C. to 1500 B.C. in several prehistoric sites within northern California (Henn 1986; Basgall and Hildebrandt 1987). They may be even older from sites within southwest Oregon (Pettigrew and Lebow 1987).

The much higher frequency of time markers and radiocarbon dates from the Late Prehistoric Period does indicate an increased use of the canyon around A.D. 900, which can be linked to the development of pithouse villages for year round habitation within the canyon. Not only does this represent more intense use of the canyon's resources but also an overall increase in population. Both increased use and an increasing population are reflected in the high frequency of Late Prehistoric projectile points (Gunther Series, Rose Spring Series and Desert Side-Notched) and the large number of prehistoric sites, seventeen with pit houses. Caution must be used, however, in equating a higher frequency of arrow-size points to an increase in use or population. The hunting and point curation strategy of a hunter using the bow and arrow contrasts with that of hunters using atlatl and spears, which is likely to lead to a larger number of arrow-size projectile points per hunter when compared to spear-size points (King 1989). The chronology of the Upper Klamath River Canyon has been modified

TABLE 13: TIME MARKERS FROM UPPER KLAMATH RIVER CANYON SITES

Time Marker	Age	Site Number	Reference
Trading Button	Historic	35KL21	Mack 1983
Type F26 Saucer Bead	AD 100-500		Mack 1983
Glass Mountain Obsidian	AD 400-Historic	35KL16	Hughes 1987
Siskiyou Utility Ware	AD 900-AD 1600		Mack 1983
Siskiyou Utility Ware	AD 900-AD 1600	35KL578	Gehr 1986a
Type G3a Olivella Ring Bead	200 BC-AD 100	35KL20	Gehr 1986a
Humboldt Concave Base A	4000-1000 BC	35KL18	Mack 1983
McKee Uniface	3000-1500 BC		Mack 1983
McKee Uniface	3000-1500 BC	35KL19	Gehr 1986a
Gunther Series Proj. Pts.	AD 250-1800	35KL16	Mack 1983
		35KL18	Gehr 1986a
		35KL19	Jensen 1987
		35KL21	
		35KL22	
		35KL25	
		35KL26	
		35KL554	
		35KL578	
		CASIS1198	
		35KL629	
		35KL633	
		CASIS16	
Desert Side Notched	AD 1600-1800	35KL16	Mack 1983
		35KL18	Gehr 1986a
		35KL19	Jensen 1987
		35KL26	
		35KL551	
		35KL578	
		35KL629	
Rose Spring Series	AD 600-1200	35KL16	
		35KL18	
		35KL19	
		35KL20	
		35KL21	
		35KL25	
		35KL26	
		35KL551	
		35KL554	
		CASIS1198	
		35KL629	

Time Marker	Age	Site Number	Reference
Elko Series	2000 BC-AD 500 or 5000 BC-AD 500	35KL18 35KL19 35KL21 35KL554 35KL629	Mack 1983 Gehr 1986a
Gold Hill Leaf	3500-2500 BC	35KL18 35KL19 35KL21	Mack 1983 Gehr 1986a Jensen 1987
Northern Side-Notched	5000-2000 BC	35KL18 35KL21 35KL25	Mack 1983 Gehr 1986a

from that proposed in Mack (1983) to one which suggests a continuous use of the canyon from approximately 7500 year ago through the Historic Period, A.D. 1850. Permanent, year round occupation begins by at least A.D. 900 and continues until approximately A.D. 1800. After that date the lack of Euro-American artifacts within aboriginal site context indicates at most a sporadic, short-term use of the canyon by nearby aboriginal groups.

SUBSISTENCE PATTERNS

Subsistence patterns throughout the prehistory of Upper Klamath River Canyon have been addressed by all three investigators. Mack (1983) has proposed the inhabitants of the canyon had a mixed subsistence, giving equal importance to fish, plants and game animals by utilizing the resources within the various microenvironments present within the canyon. Mack (1983) also proposed generalized hunting and gathering could describe the subsistence activities of the canyon's inhabitants throughout its 7000 years of use, and this generalized economy did not change upon the establishment of semi-permanent villages at approximately A.D. 900. In contrast, Jensen (1987) proposed the earliest house pits within the canyon were used only in the winter as a result of a more focused subsistence strategy, and later house pits were occupied nearly year round based upon a more extensive use of local resources. His hypothesis is based primarily on his analysis of the artifacts and faunal remains from Housepit 14, which was partially excavated, and the data used in a comparison with the faunal remains and artifact assemblage from Housepit 1, reported by Mack (1983). He noted a total lack of turtle bone and only two fish bones from Housepit 14, as well as a lack of bone tools, in contrast to Housepit 1 in which both turtle and fish bone were recovered in fair number and which also had many bone tools.

A reanalysis of the unidentifiable bone from the Jensen Collection has changed the faunal counts and the bone tool counts for Housepit 14 (Table 2, Table 11). Fish bone has increased slightly to 5.3% and turtle bone from 0 to 4.3%. In addition, three bone tools were recovered from the unidentifiable bone: one unclassifiable fragment, one shoe-horn shaped object (Class N2) and a bone wedge, Class D6. These findings suggest that the differences between Housepit 1 and Housepit 14 are ones of degree not of kind, thus removing the evidence for Jensen's hypothesis. The faunal evidence from both the Jensen and Gehr collections indicates a generalized hunter-gatherer subsistence pattern throughout the occupation of the canyon, with no significant differences throughout the 7000 years of the canyon's use.

Though Housepit 1 remains distinctive with its large number of bone tools and significant number of fish and turtle bones, the explanation probably does not lie in the direction of differences in seasonal use or subsistence patterns. It may be linked to status differences between the residents of this house compared to the others so far excavated at 35KL16 or to the duration of use of this housepit, which had four separate floors as compared to two at Housepit 16, probably two at Housepit 14 and two or three separate occupations at Housepit 2.

Evidence for a generalized hunter-gatherer subsistence pattern also comes from the artifact assemblages at the various sites. Projectile points indicate the importance of hunting. Knives and scrapers can be used for cutting meat and vegetable fiber, as well as for the manufacture of other items made of both animal and plant products. The importance of fishing is reflected in the presence of a number of fishhook barbs, harpoon barbs and fish gigs. The use of plant foods is represented by the presence of mullers, millingstones, pestles and mortars.

Gehr (1986b) hypothesized a difference between the upstream site cluster and the downstream site cluster with regard to their economic activities. He based this hypothesis on the frequency of particular artifact classes within the sites. He assumed certain artifacts indicated certain activities. His assumptions, however, seem inconsistent with what is generally thought to be the function of stone tools based upon ethnographic analogy and edgewear studies. For example, he assumes typable projectile points indicate a different function than untypable projectile point fragments. He separates these two into different functional groups. However, there is no ethnographic evidence to indicate any difference in function between projectile points and projectile point fragments found within villages. He also separates utilized flakes from knives and scrapers assuming different functions for each of these artifact classes. From Semonov's (1973) work with stone tools it seems apparent this sort of division does not reflect different uses.

Gehr (1986b) proposes on the bases of his assumptions that sites with a high proportion of utilized flakes were likely fish processing sites. Though there is no doubt that sharp utilized flakes would be useful for cutting up fish, they would be equally useful for cutting up meat or shredding vegetable fiber. Gehr relates a higher frequency of utilized flakes from sites on the lowest river terraces to the importance of fish processing at these sites. He proposes the sites further removed from the river on higher terraces and ridges have a lower frequency of utilized flakes because the processing of fish was less important. It is logical that sites near the river would be likely areas for fish processing. Ethnographic information for the Klamath and Shasta, as well as other ethnographic groups, indicate fish were often processed in areas near rivers rather than among the houses within the villages; this is particularly true for salmon and steelhead which were often dried on racks adjacent to but not among houses. We cannot assume, however, the inhabitants of those villages on the higher terraces and ridges acquired fish only through exchange with those living nearer the river. The ethnographic evidence, such as the joint Klamath-Shasta fishing camp mentioned by Spier (1930), supports a scenario of families coming to well-known fishing spots to catch and presumeably to process fish before bringing it back to their villages. This scenario is also supported by the presence of fishing equipment such as barbs, gigs and net sinkers within villages sites located both on the first terraces and on the higher terraces and ridges.

There may in fact be some functional differences between sites within the canyon, but there is no evidence to support differences in subsistence activities of the village sites. One might expect temporary hunting camps and root gathering, seed gathering and acorn gathering camps within the Upper Klamath River Canyon in locations where these resources might be particularly abundant during certain times of the year. Today, a casual survey of the canyon reveals abundant plant resources. An inventory and study of the plant resources of the canyon is needed in order to understand the potential role of plants within the subsistence pattern of the canyon's past inhabitants.

One other point must be made here. It is likely that some village sites located adjacent to lithic scatters or midden sites should not be assigned different site numbers. For example, 35KL20 is a village site located on the terrace above 35KL21. There is no real on-the-ground separation between these two sites. The edges of some of the housepits are not more than 20 meters from the midden deposit of 35KL21. It is very likely that the inhabitants of 35KL20 carried on various activities including fishing and fish processing at 35KL21.

SETTLEMENT PATTERN

The settlement pattern for Upper Klamath River Canyon to some degree reflects subsistence patterns but differs over the 7000 years of occupation within the canyon. Gehr (1986b) perceives a settlement pattern during the Late Prehistoric Period which split the sites into downriver and upriver clusters. As noted above his hypothesis is based on some questionable assumptions concerning the functions of certain tool classes and ethnographic information he had received from a Shasta informant. Mack (1983) also proposes a split between downriver and upriver site clusters not based upon site function but rather on possible ethnic differences reflected within the archaeological record. Both hypothesis use several types of sites within the canyon. These include large, open midden sites, rockshelters, quarry sites, house pit villages, house pit hamlets, rock art, rock features, and small lithic scatters.

Mack (1983) reported, and Gehr (1986a) confirmed, some interesting environmental associations exist for the sites within the canyon. Many of the sites are located on the first or second terraces of the river, and many of these are adjacent to shoals in the river, where the channel widens out and is relatively shallow. Whether on the lower terraces or located on higher terraces and ridges, most sites are adjacent to small permanent or intermittent streams or springs. Lastly, because of the canyon's configuration, all the sites are located on or near the edge of the two life zones which interfinger in the area: the Upper Sonoran and the Semi-humid Transition zones. The preference for this combination of environmental features provides several advantages. The lower river terraces provide a rather, flat well-drained surface on which to live, which also places a village or camp near the river with its unique resources. Location near small permanent streams provides a source of fresh, drinking water and access to a greater supply of fish (Chartkoff and Chartkoff 1975). Location of sites adjacent to shoals and in the area of mixed life zones provides access to several food sources, plant and animal, within a relatively short distance. These advantages would exist not just for the Late Prehistoric Period but for earlier occupants of the canyon as well (Baumhoff 1963).

Of the several site types recorded within Upper Klamath River Canyon, quarries and rockshelters are few in number. Only one quarry site exists on an upper terrace within the downriver site cluster. It probably provided much of the chert used by the inhabitants of the canyon. The two rockshelters seem to have had only minor use over the canyon's prehistory. Salt Cave, 35KL24, has almost no evidence of prehistoric human use, though the heavy rockfall and guano deposit within the shelter may be hiding evidence of human use during some period in the past (Mack 1983). The second shelter, CASIS16, was excavated in 1953 and is reported on here. Its small collection of flaked stone and groundstone tools clearly tie it to the Late Prehistoric Period and the other sites within the canyon. These rockshelters appear to have been used as small, temporary camps. The small lithic scatters also appear to be temporary camps, probably used by small numbers of people during some special purpose activity such as hunting, epos gathering, seed gathering or acorn gathering. These sites most frequently are located in the flats or upper terraces away from the river. Some of these areas today have large areas of epos or grasses and herbaceous plants, while others support groves of oak trees. The large midden sites and larger villages most frequently are located on the first or second terraces of the river. The few rock art and rock features are associated with these sites. Often the two types of sites are adjacent to each other. The midden sites show occupation over considerable spans of time; Klamath Shoal Midden being the prime example with radiocarbon dates and time sensitive artifacts spanning 7000 years.

The village sites may all date to the Late Prehistoric Period. It is likely the large midden sites were important activity areas during the Late Prehistoric Period for the inhabitants of the village sites. As mentioned above, midden areas on the first terraces may have been the fishing stations and fish processing areas for the village sites. Some village sites have house pits excavated into an older midden component. Big Boulder Village illustrates this situation with housepits dating to around A.D. 1400 by radiocarbon dating and a lower midden component dating to approximately 4000 B.C. based upon the presence of time sensitive artifacts. The smaller house pit hamlets tend to be located away from the lower river terraces. They probably represent small satelites of the larger villages. They have not been investigated as yet, but surface artifacts indicate they also date from the Late Prehistoric Period.

The rock art and rock features associated with some of the village and large midden sites can not all be easily interpreted. Boulders with cupped rock art, sometimes called "rainrocks", exist at 35KL18 and reportedly once existed at CASIS1198 (Mack 1983; Gehr 1986a). These rocks result from ceremonial activity and associate frequently with the territories of Hokan speakers, including the Shasta (Nissen and Ritter 1986). However, two cupped rock art sites occur in Modoc territory, Canby Bay and Meiss Lake, leading Nissen and Ritter (1986) to also associate cupped rock art with Hokan-Penutian interaction areas. Rock rings located at three sites, 35KL20, 35KL785 and 35KL791, seem similar though not as well defined as rock rings in the Gerber Reservoir area which delineate summer houses of the Modoc in that area (Burnside Personal Communication 1989). Presumably, those along the Klamath River also delineate houses, though none have been excavated. Rock rings are also common within Achomawi territory (Dryer 1988). Another rock feature found within the Middle Pit River drainage, Achomawi territory, are low stone walls. One site within Upper Klamath River Canyon also has low stone walls, CASIS1198.

Gehr (1986b) proposed the downstream cluster and the upstream cluster each consisted of a principal village, an associated burial area and several sites of other functions. This seems logical given the ethnographic information available. However, it is based partly upon the assumptions discussed above concerning tool class and function, which weakens the hypothesis. In addition, Gehr assumes the ten sites in his sample, as well as, others within the downriver cluster are all used at the same time. This may well be a false assumption. The archaeological evidence can not differentiate the dates of occupation for the several pithouse villages within the canyon beyond the general Late Prehistoric Period. The time sensitive projectile points such as Desert Side-Notched and Gunther Series existed for hundreds of years. This is particularly true for the Gunther Series points. Radiocarbon dates from several house floors within each house pit village would probably permit a specific chronology for the Late Prehistoric Period village sites but there are presently too few such dates to allow such a chronology. Only two house pit villages have more than a single radiocarbon date: 35KL16, indicating occupation spanning 400 years, A.D. 980 to 1370, and 35KL26, indicating occupation for approximately 100 years, A.D. 1550 to 1620. The only other dated house at 35KL18, dates to A.D. 1386, which seems to make it contemporary with 35KL16 but not 35KL26. However, there are 41 observable house pits at 35KL18; since it is unlikely that they were all occupied simultaneously, the time span for this village may cover the entire Late Prehistoric Period. Clearly the type of settlement pattern hypothesis which Gehr proposes will require many more radiocarbon dates from several houses within each of the pithouse village sites in order to confirm contemporalnaity of the sites.

Multiple floored houses, such as the ones at Border Village, 35KL16, also will require dating of the top and bottom floors of a house in order to determine the span of occupation for each house. Presently, it can not be determined if Housepit 1 at 35KL16 was abandoned for some number of years between the occupations respresented by each floor, or if each floor was built immediately on top of the old.

The information which is available does suggest at least part of Gehr's hypothesis has merit. From the method of construction identified and quantity of artifact and faunal remains excavated from the housepits, it is reasonable to describe these sites as permanent villages and not temporary or seasonal residences. The debitage from stone tool-making and tool rejuvenation, as well as ground stone tools on every house floor, indicates winter habitation. The faunal remains point to spring, summer, and fall habitation. The low number of fish bone, particularly salmon and steelhead, hints at fishing camps and fish processing areas elsewhere, though perhaps only a few meters away. This would not necessarily mean the entire family would live the year round in the village. Ethnographic information (Dixon 1907, 1910; Holt 1947) indicates it was a common pattern for many people living along the Klamath River to leave their permanent villages in the summer or fall to hunt and gather in the surrounding uplands. Presumeably the Chinook Salmon runs would keep them near the river from April through September (Kroeber and Barrett 1960; Baumhoff 1963). The movement of people would not empty a village but the majority of people would leave. The Shasta lived in temporary camps in the uplands to gather acorns and hunt deer (Holt 1947). Many tribal groups in northern California and southwestern Oregon had a similar pattern (Kroeber 1925). Therefore, it is reasonable to hypothesize that the inhabitants of the Upper Klamath River Canyon exhibited a similar pattern.

At this time the most likely settlement pattern during the Late Prehistoric Period for the inhabitants of Upper Klamath River Canyon is year round living in pithouse villages. Temporary camps associated with resource acquisition activities were in the surrounding uplands. Such sites should be located in areas which give, as nearly as possible, direct access to a particular resource, and they would not be expected to contain the complete inventory of artifacts and faunal remains found at the village sites. Fishing camps and fish processing areas probably exist near the villages, close to the river's edge. It is possible such fish processing areas may be found in the middens directly associated with house pits or in nearby midden areas. Klamath Shoal Midden most likely was the fish processing area for Klamath Shoal Village and it, as well as 35KL554, may have been the joint Klamath-Shasta fishing station referred to by Spier (1930).

The evidence for the settlement pattern in the canyon during the earlier prehistoric use of the area remains limited. Clearly the radiocarbon dates from 35KL21 and the various time sensitive artifacts from that site and others indicate the canyon was inhabited back to at least 5600 B.C. The features and burials recovered from 35KL21 and the burials from 35KL18 midden indicate substantial occupation. The faunal remains associated with Klamath Shoal Midden, 35KL21, point to occupation of that site during spring, summer, and fall. During these earlier periods the inhabitants of the canyon seem to have had major campsites, which may be decribed as base camps on the river terraces to which they returned during certain seasons of the year over a period of perhaps hundreds of years. As yet there is no evidence for structures associated with these earlier occupations.

TECHNOLOGY

In general the technology used by the inhabitants of the canyon changed very little over time. The basketry impressions described by Mack (1983) for the Salt Cave Project collections remain the only evidence for basketry. All four specimens were recovered from house pits in 35KL16. All were specimens of soft twine basketry, two have been identified as being constructed of tule and a third is of juncus (Dawson, Personel Communication 1977). The use of twisted tule with a pitch of stitch down-to-the-right is reported for Klamath and Modoc Barrett 1910; Gatschet 1890). It has been associated with archaeological cultures within the Klamath Basin and the Northern Great Basin (Cressman 1956). The Upland Takelma and Achomawi also reportedly used tule in their twined basketry. The *juncus* specimen shows a pitch of stitch down-to-the-left. The use of *juncus* is found among northern and central Oregon tribes and may be associated with the Upland Takelma. Shasta twined basketry reportedly was done with pine root, with the pitch of stitch down-to-the-left. Using only the basketry evidence from 35KL16 would lead to the conclusion that the site was either Upland Takelma, Achomawi, Klamath or Modoc. However, this implies the ability to characterize the basketry of Shasta and Takelma with some certainty. As the discussion in Mack (1983: 126-128) indicates, this in approach cannot be supported. Only Klamath and Modoc basketry is well studied and described. The information on Shasta and Upland Takelma basketry is incomplete and in the case of the Shasta possibly inaccurate. The ethnographic information was gathered after the Shasta had lived many years on the Siletz Reservation on the Oregon coast where their basketry may have been influenced by Southwest Oregon basketry techniques and materials (Dixon 1907, 1910; Sapir 1907a, 1907b, 1909, 1910a, 1910b, 1922, Drucker 1937).

The variety and distribution of bone and antler artifacts within the prehistoric sites of the Upper Klamath River Canyon indicate their general importance. Artifacts of bone and antler were used in stone knapping, hide preparation, wood working, fishing and as ornaments. Both woodworking and fishing equipment fit well within these forested, riverine environment. There is little difference in the distribution of these tools within or between sites. The lower two floors of Housepit 1 at 35KL16 has a larger than expected sample of bone and antler artifacts, which is partly explained by the large number of bone beads associated with a cremation within that house. The presence of a carved elk antler spoon associated with a second incomplete cremation within that house indicates the residents of this house may have been wealthier and had higher status than those residing within other houses at that site (Kelly 1930). This house also had a large number of Gifford's (1940) Class C, gouges, fleshers and flakers within its bone tool assemblage. This class of tools is assumed to be used primarily for hide preparation. The large number of these tools in this house may indicate hide preparation was especially important to this household. It could be hypothesized that the apparent wealth of this house was tied to trade in deer hide. Generally, the houses at 35KL16 have a higher frequency of bone tools than those at 35KL18. The fairly large number of bone tools Gehr (1986a) recovered from the testing of 35KL26 may point to somewhat greater use of bone tools by inhabitant of the downstream sites. However, the strata at 35KL21 produced a large collection of bone tools, indicating they were also important to inhabitants of the upstream sites.

The majority of the ground stone artifacts were used for food processing: mullers, millingstones, pestles, portable mortars, hopper mortar bases and bowls. These reflect a strong reliance on plant foods by the inhabitants of the area. Aside from ground stone artifacts within the curated collections from Upper Klamath River Canyon, the number of whole and broken mullers and millingstones still present on the surface of the village sites within the canyon support the impression that plant food processing was very important. The only sites with a low number of ground stone tools are the midden sites and small lithic scatters. The activities during the Late Prehistoric Period at such sites may not have included a great deal of food plant processing. The evidence from the earlier strata from 35KL21 (5500-4500 B.C.) indicates groundstone tools were not frequently used by the earlier inhabitants of the canyon. This may be due to a general lesser importance of bulbs and hard seeds for these earlier cultures or it might simply indicate that food plant processing was carried on at other locations.

The ground stone tool types have a somewhat different distribution within the upriver and downriver site clusters, but the difference is not as great as indicated by the investigation of the Salt Cave Project collections (Mack 1983). Specifically, the Class 6, Developmental Mullers, have now been recovered from two downriver sites, 35KL16 and 35KL26; previously they appeared to be limited to the upriver sites. In addition, the portable stone mortar was also thought to be limited to the upriver sites, but has now been recovered from a downriver site, 35KL25.

However, there still seems to be a higher frequency of shouldered and slightly shouldered uniface mullers and rounded HAR stones within the upriver sites and a preference for unshouldered and slightly shouldered mullers and angular HAR stones within the downriver sites. As noted above, the significance of this difference needs to be tested as it is based on a hypothesis offered by Trygg (1971) which argued Modoc sites should show a preference for shouldered, uniface mullers and rounded HAR stones.

The largest category of tools within the Upper Klamath River Canyon are flaked stone tools. Some of the types within the various tool categories are recognized as being time sensitive and others may indicate relationships or influences from adjacent areas. The projectile points include many time sensitive types which also indicate influence from three areas: the Klamath Basin, north-central California and southwest Oregon. Though few types within the other flaked stone tool categories can be considered time sensitive, T-based drills and McKee Unifaces do indicate influences from other areas. These different influences upon the peoples of this area also have been recognized by ethnographers. Ethnographic studies of the Klamath and Modoc describe their cultural inventory as a mixture of Plateau, Great Basin and Californian traits (Voegelin 1942; Hofmeister 1968). In addition, trait comparisons have linked the Klamath and the Modoc more closely to the Shasta than to any other group.

The projectile point types found within the prehistoric sites of Upper Klamath River Canyon paralleled the time range indicated by the radiocarbon dates and other time sensitive artifacts. Northern Side-Notched points were recovered from four sites, indicating use of these sites somewhere between 5000 B.C. and 2000 B.C. Three of these four, 35KL16, 35KL18 and 35KL25, were large house pit villages during the Late Prehistoric Period, but the presence of Northern Side-Notched points indicated the sites were used during an earlier period as well. The presence of Gold Hill Leaf points and Humboldt Concave Base A points also confirmed use of the canyon sites during this time period. The Humboldt Concave Base A points were only found within the deeper midden deposits of 35KL18, but the Gold Hill Leaf points were recovered from four sites: 35KL16, 35KL18, 35KL19 and 35KL21. Elko Series points which may date from 2000 B.C. to A.D. 500 or earlier occurred primarily within the upriver sites, particularly 35KL18 and 35KL21. Only one downriver site, 35KL629, contained an Elko Series point. The Late Prehistoric Period was represented by three major projectile point series and types: Rose Spring Series, Gunther Series and Desert Side-Notched. Of these the Gunther Series points overwelmingly dominanted the projectile point assemblage from all the sites. The large number of Gunther Series points indicated, along with the number of pithouse villages, there was a substantial increase in the population of the canyon during the Late Prehistoric Period. The extremely large number of Gunther Barbed points within 35KL16, over 75% of the projectile point assemblage, remained one of the characteristics of the site which linked it closely to southwest Oregon and northwest California (Treganza 1958, 1959; Gould 1966, 1972). The higher proportion of Rose Spring Series, Elko Series, Humboldt Series and Northern Side-Notched points within the upriver sites implied greater influence or cultural connections to the Klamath Basin and by extension the Great Basin and the Plateau.

The distribution of other stone tool types tend to support this impression. The presence of Key or T-shaped drills primarily within the upriver sites also links them to greater Great Basin and Plateau influence. The presence of a few corner-scrapers also adds to the evidence (Mack 1983). The artifacts related to an influence from southwest Oregon and north-central California, in addition to the Gunther Series points, include McKee Unifaces and vein chalcedony knives, Knife Type 1.

The raw material used for flake stone tools also requires consideration. As already noted, obsidian and CCS are the two most prominent materials, with fine-grained basalt being of minor importance. Obsidian dominates the flaked stone tool categories with the exception of drills, scrapers and cores. The reasons for the higher frequency of CCS for these categories has been discussed above: the physical properties influencing its use for scraper and drills and the location of a chert quarry within the downriver site cluster. There is a higher frequency of CCS tools within the flaked stone tool assemblages from the downriver sites when compared to the upriver sites. Their proximaty to the chert quarry no doubt accounts for this difference. Gehr (1986b) hypothesizes that 35KL554 may be the point of entry for obsidian into the canyon. He notes a particularly high frequency of obsidian utilized flakes and debitage in this site when compared to all others and the generally higher frequency of obsidian within all the upriver sites. His evidence is not particularly convincing for 35KL554 being the port of entry, since there is also an extremely high frequency of obsidian within 35KL18 and 35KL21. Gehr proposes 35KL554 might well be the joint Klamath-Shasta fishing station, laik'elmi, noted by Spier (1930). Mack (1983) has suggested Klamath Shoal Midden might be the location of that site. Gehr's hypothesis includes the idea that the Klamath brought obsidian into the canyon to exchange for fishing rights. Though this hypothesis seems possible it does not take into account the obsidian sourcing information for the canyon sites (Mack 1983:263; Hughes 1987). Meager though it is (20 samples: 17 from 35KL16, two from 35KL18 and one from 35KL21), evidence suggests most of the obsidian comes from the Medicine Lake Highlands. This source is closer to the sites within Upper Klamath River Canyon than to the known Klamath village sites. Therefore, it is just as likely that the residents of the canyon went directly to the source. One might make an argument for the Klamath bringing obsidian into the canyon if much of the obsidian within canyon sites was from the Sprague River or the Warner Mountains, but these sources seem to be of only minor importance to the canyon residents. Additional obsidian sourced samples from both upriver and downriver sites would allow for a much better understanding of the source of obsidian for the canyon. The data at this point indicates strongly that the Medicine Lake Highlands was the overwelmingly important source of obsidian. Its location to the southeast of the canyon indicates the canyon residence could have acquired it through trade with the Modoc and/or Achomawi or formed periodic expeditions to travel directly to the source themselves.

The ceramics from the Upper Klamath River Canyon have at this point the most limited distribution. Ceramic figurine fragments were recovered from 35KL16, 35KL21 and 35KL25; the vast majority come from 35KL16. The pottery, Siskiyou Utility Ware, comes from 35KL16, with the exception of one sherd recovered from 35KL578, and two questionable sherds from 35KL18. The pottery is clearly limited to the downriver sites, perhaps only to 35KL16. Mack (1983) proposes the presence of Siskiyou Utility Ware within the house pits of 35KL16 indicates an Upland Takelma occupation of that village, at least from A.D. 1300 to 1500. Continued work with Siskiyou Utility Ware has increased the known distribution of the pottery (Mack 1987, 1988, 1989a) and the figurines (Mack 1990) within the area of the Western Cascades of southern Oregon and northern California. Within the Klamath River Drainage, Siskiyou Utility Ware was recovered from a large campsite near Ager (Nilsson 1988), from a rockshelter, CASIS13, where it was first discovered (Wallace and Taylor 1952), and from the rockshelter within the John C. Boyle Dam Reservoir, 35KL13. The collections from the two rockshelters together total less than five sherds. At this point the only collections of significant size from the Klamath drainages are the ones from Ager and the Upper Klamath River Canyon at Border Village.

Other ceramic collections useful for comparison come from the upper Rogue River drainages and the middle Pit River drainages. By far the largest number of sites, the greatest number of sherds and the oldest sherds come from sites along the drainages of the upper Rogue River. These date by radiocarbon to between A.D. 900 and A.D. 1600. If quantity and time depth are an indication of origin, then the upper Rogue River would seem to be the center of Siskiyou Utility Ware. The dated occurrences of the pottery along the Klamath drainages fall between A.D. 1100 to A.D. 1500. There are two known sites within the middle Pit River drainage which contained small collections of Siskiyou Utility Ware: the Lorenzen Site, CAMOD250, and a site on Lake Briton, CASHA386 (Mack 1988, 1989a). These sites have radiocarbon dates which seem to date the pottery on the middle Pit River to between A.D. 1450 and 1700. These dates suggest a spread of the pottery southward over a 400 year period from the upper Rogue River drainage to the middle Pit River drainage. It is no longer logical to assume all Siskiyou Utility Ware was made by Upland Takelma, as it covers too large an area. Therefore, its presence at 35KL16 may not indicate Upland Takelma occupation. However, it is possible Upland Takelma or related Penutian speakers once expanded into the Klamath River drainage perhaps from A.D. 1100 to A.D. 1500 and then were pushed out by the rumored expansion of the Shasta. This would explain the total lack of this pottery within the Irongate Site, which dates from between A.D. 1400 and 1600 (Leonhardy 1961). It would also explain the lack of this pottery within the Klamath Basin or even the upriver village sites within the canyon which date to the Late Prehistoric Period.

The presence of Siskiyou Utility Ware in a few sites within the middle Pit River may indicate cultural interaction between the middle Pit and upper Klamath River during a limited period within the Late Prehistoric Period, not migration of peoples from the Klamath to the Pit. Of course, this may also explain the presence of Sisikiyou Utility Ware on the upper Klamath. Much more evidence will be needed to confirm or deny these two possible hypotheses. At this point it still remains a possibility that 35KL16 represents Upland Takelma occupation of Upper Klamath River Canyon previous to its occupation by the Shasta.

CHAPTER 4-REGIONAL COMPARISONS

To better understand and interprete the data presently available for the prehistory of Upper Klamath River Canyon, it is useful to compare the sites, the artifact assemblages and the faunal assemblages with sites from other nearby areas. The most directly comparable area is the Upper Klamath River drainage. This includes the river and its tributaries from the head of the Klamath Canyon near Keno, Oregon, downriver to the confluence of the Shasta River, a major tributary of the Klamath within Siskiyou County, California. Comparisons between Klamath Canyon and major, adjacent or nearby areas examine similarities and differences between the prehistoric cultures of the canyon and three regions: the Klamath Basin, the Upper Rogue River, the middle Pit River. Some comparisons are also made with prehistoric cultures of the Applegate River and the Upper Sacramento River Canyon.

UPPER KLAMATH RIVER

The sites closest, geographically, are those within the upper Klamath River drainage. These sites include the rockshelter, 35KL13, the Irongate Site, CASIS326, and the Keno Site, 35KL28, now under the reservoir behind Keno Dam. Only the Irongate Site has been fully described (Leonhardy 1961). A brief report was written on the material from 35KL13 (Newman and Cressman 1959); a preliminary report was begun but left unfinished on the excavation of 35KL28 (Cole 1965). Two of these sites, 35KL28 and CASIS326, contain housepits which were excavated. The cultural material from the Irongate Site, CASIS326, is almost identical to the material from 35KL16. The single exception was the total lack of pottery within the Irongate Site. The two radiocarbon dates for Irongate come from two floors of Housepit 4. They are A.D. 1550 and A.D. 1440, overlapping slightly the dates for the housepits from 35KL16. The house structures seem identical within the two sites as noted by Mack (1983). Also similar between the two sites were the high frequency of Gunther

Barbed projectile points (over 60% of the collections), figurine fragments and specialized mullers (Type 6, made of a volcanic conglomerate). With the exception of the lack of pottery and a lower frequency of bone tools in the Irongate Site, the two sites are identical. They both contrast with the housepit site at Keno, 35KL28. The house at Keno seems closer in form to those at 35KL18. Though it was not completely excavated, it was recorded as having a single floor and a pit excavated from the floor into the strata below the house, presumeably used for storage. In addition, the frequency of Gunther Barbed projectile points, 35%, mirrors the situation at 35KL18. Therefore, the Irongate Site appears similar to the downriver sites in Upper Klamath River Canyon and the Keno Site resembles as much as can be determined from the small, incompletely analysed collection the upriver sites in the canyon.

The third site, 35KL13, is a rockshelter now flooded by the reservoir behind John C. Boyle Dam. The assemblage recovered from this shelter was surprisingly diverse in terms of artifact class (Newman and Cressman 1959). In addition to projectile points, most of which were Gunther Barbed and Gunther Stemmed, and approximately 50 unifacial flaked tools, it contained six hopper mortar bases and millingstones, a rubbing stone, a fishhook or harpoon barb of bone, a graver, scrapers and three pot sherds of Siskiyou Utility Ware. Aside from the pot sherds, its assemblage would match any of the excavated sites in the canyon. It, therefore, can be dated to the Late Prehistoric Period within the canyon. If we travel just a few kilometers upriver from the Keno Site the environment changes and we enter the Klamath Basin.

KLAMATH BASIN

Klamath Basin prehistory expectedly contains many similarities to Upper Klamath Canyon, however, the environmental differences effect the character of the cultures within the basin when compared to the canyon. These also are reflected within the archaeological record. We should also consider here the ethnographic information for both areas, particularly that for the Klamath Basin which is much more complete. Several ethnographic researchers have grappled with the problem of how to characterize the culture of the Klamath-Modoc as compared to surrounding cultural areas. Spencer and Jennings (1965) have classified the Klamath-Modoc as Plateau, Ray (Ray et al 1939) includes them in the California area as does Voegelin (1942) and Klimek (1935). Others, such as Spier (1930) and Driver and Massey (1957), oppose classifying the Modoc as Californian. Kroeber (1939) suggests the Klamath-Modoc should be within the Great Basin cultural area. After completing a statistical analysis of 14 Plateau and Californian groups, Hofmeister (1968) concludes the Klamath-Modoc are more similar to the California cultural area than the Plateau. Reetz (1949) suggests some house construction traits associated with northwestern California diffused from the Klamath. He suggests these traits would also be found among houses from the northern and western Great Basin during wetter periods. Therefore, we should not be surprised to find the archaeological record for the Klamath Basin a mixture of cultural traits associated with the Great Basin, the Plateau and California. This is probably best illustrated by projectile point typology within Klamath Basin sites.

The projectile points from the Klamath Basin sites fall into point typologies associated with the Great Basin as well as point types associated with northern California and southwest Oregon. The types could also be classified using Plateau point typologies, as Sampson (1985) noted, but this is not generally done. The importance of this problem surrounds the practice of using point types for estimating the age of sites within the basin. The typology used may effect the resulting estimated dates. This problem has been noted by Sampson (1985) and by Basgall and Hildebrandt (1987). If the dates normally associated with certain point types, such as Elko Series points in the Great Basin, do not seem good temporal markers it seems wise at this point to ignore such types for dating purposes. It seems clear that certain point types from the Plateau, Great Basin and northern California-southwest Oregon have valid temporal associations within the Klamath Basin: Gunther Series, Desert Side-Notched and Northern Side-Notched as examples. Therefore, we can confidently use these point types as temporal markers within Upper Klamath River Canyon as well.

Scientific archaeological investigations were begun in the Klamath Basin from 1938-1940 by Luther S. Cressman. Previous to his work the only recorded excavations in the basin had been done by J. Carlisle Crouch, a chief ranger at the Lava Beds National Monument. He and his crew excavated Fern Cave (CAMOD17) (Canfield and Crouch 1936). From 1938-1940

Cressman made test excavations and surface collections at two sites: the Narrows (CASIS257) and Laird's Bay (CASIS230). In addition, Cressman studied an extensive collection by Mr. and Mrs. Frank Payne, collected from these two sites. From the analysis of the artifacts and their geological associations Cressman, tentatively proposed three cultural horizons for Lower Klamath Lake (Cressman 1940, 1942).

The oldest cultural component was represented primarily by the collection from the Narrows Site. Some of the material was in situ but most of it was from the Payne Collection. Fossilized bone points, heavily weathered manos, utilized flakes and projectile points seemed associated with fossilized mammal bones, some from extinct species. The projectile points included several large side-notched points, which could be considered Northern Side-Notched and Elko Side-Notched, and a few Lake Mojave and Humboldt types. This horizon was estimated to date to roughly 5500 B.C., which matches dates for similar assemblages from sites in the Northern Great Basin, such as Fort Rock Cave.

The second horizon was represented primarily by artifacts from CASIS230. Many of the artifacts were recovered in situ, though many were from the Payne Collection. The artifacts included: bone tools; manos, including a few which may represent a developmental stage of the two-horned muller, possibly indicating early specialized lakeside adaptation; a drilled human skull; a drilled tuffaceous disk; and, several projectile points typeable to Northern-Side Notched and Elko Series. Cressman estimated the date for this horizon to be 2000 B.C.

The most recent horizon was considered historic. The projectile points were all small side and corner-notched varieties, which could be classified as Rose Spring Series, Gunther Series, Desert Side-Notched and Cottonwood. The sites contained groundstone pipes, special wocus mullers and grinding slabs, mortars and pestles, shell beads and a variety of flaked stone artifacts.

In conjunction with Cressman's report on Lower Klamath Lake, Heizer (1942) reported on two sites along the southeast shore of Tule Lake. The artifacts included small projectile points, mammal bone, bird bone, shell and seed beads, and basketry. The material represented the recent prehistoric period. Heizer attributed it to Modoc occupation. However, Cressman's analysis of the basketry from these sites casts doubt on Modoc origins for the cave materials and the burials (Heizer 1942).

The second archaeological investigation in the Klamath Basin was also directed by Cressman along the Spague and Williamson Rivers just to the northeast of Upper Klamath Lake (Cressman 1956). Many sites were excavated or tested; Medicine Rock Cave (35KL8), Kawumkan Springs Midden and house pits (35KL9), and six housepit sites 35KL1 through 35KL7, 10, 11, and 12. Medicine Rock Cave was used intermittently from a unknown date before the eruption of Mt. Mazama, 6500 B.P., until historic times. It was not used by the Klamath historically who avoided it because of religious beliefs. It seemed to be used seasonally during the fish runs, there being a great deal of fish bone and mussel shell in the debris. Kawumkan Springs Midden was occupied previous to the housepit sites, originally estimated to date from 5500 B.C. but more recently determined to date from 3000 B.C. (Aikens and Minor 1978). The housepits from the two rivers date to the proto-historic and historic Klamath occupation of the area. Cressman felt the artifacts from the housepits and Kawumkan Springs Midden showed a continuity in stone working traditions. Unfortunately, the strata at Kawumkan Springs were mixed and did not produce a clear cultural sequence.

Cressman's research in the basin had two major concerns. He wished to show a detailed cultural sequence for the occupation of Klamath Basin, and he wished to understand the relationship of that sequence to the Northern Great Basin cultural sequence. He did produce a detailed description of Klamath material culture in the historic and proto-historic period. He could not link it positively to the older assemblage at Kawumkan Springs. He did recognize that early in the occupation of the basin people began to specialize in the exploitation of the available food resources. For the earlier periods he described the subsistence pattern as being similar to that of the Northern Great Basin with the additional use of some fish. This was followed by a period in which mammals were less important in the diet and the main dependence shifted to fish. At the same time, exploitation of wocus began to become important as evidenced by special mullers. Wocus exploitation became even more effective in later periods. Basically, the more abundant environment of the Klamath Basin allowed an early specialization based on fish and wocus, separating the cultural development of this area from the Northern Great Basin.

In the mid-1950's further work was done around Lower Klamath Lake and Tule Lake. The primary investigators were R.J. Squier and G.L. Grosscup (1952, 1954). From the data collected, Squier (1956) proposed three phases within Cressman's "Historic" Horizon. The most recent was named the Tule Lake Phase and was characterized by small projectile points, including Desert Side-Notched, large obsidian blades, twined basketry, bone tools, mammal bone, bird-bone, shell and pine-nut beads, hopper mortar bases, thin grinding slabs, a few portable bowl mortars and cremations. The next phase, Gillem Bluff, was stratigraphically below the Tule Lake Phase in rockshelter sites, but had a sparse artifact inventory. The oldest phase was called Indian Bank and was only found at the open sites of Lower Klamath Lake. Squier considered it possible that the Gillum Bluff inventory was simply a restricted assemblage of the Indian Bluff Phase which is characterized by large projectile points, flexed burials, stone mauls, antler wedges, olivella shell beads, bird bone whistles, bone pins and pendants, tubular stone pipes, portable bowl mortars and a few thin grinding slabs. Squier noted a strong California influence, rather than Northern Great Basin for this phase.

B.K. Swartz, Jr. (1961,1964) surveyed and then excavated four sites in the Tule Lake area in the early 1960's. He was able to divide the occupations of the large village site, the Peninsula Bay Site (CASIS101) into four major components. The most recent was historic, including rock fortifications and artifacts from the Modoc War. The housepits from the site were Component III, and he considered them to be the remains of the historic Modoc village of Gumbat (Swartz 1964). Component III was distinguished from the others by the presence of small projectile points, including some Desert Side-Notched, grinding slabs, hopper mortar bases, palettes, circular rubbing stones, flanged tubular pipes, bone whistles and dice, twined basketry, housepits and cremations.

The midden deposits were divided into Component I and II and were assumed to be earlier than the housepit materials. Component II was represented by Humboldt Concave Base projectile points and by corner and side-notched points. The component also included bowl mortars, deep-basined mortars, hopper mortar bases and grinding slabs. The primary method for disposal of the dead was secondary burial in cairns. Large, thick lanceolate points were the only distinguishing artifact of Component I.

Swartz (1964) organized the components into three phases which he compared to those of Cressman (1940) and Squier (1956). His earliest components were comparable to Cressman's Laird's Bay Horizon, which Swartz split into two phases. His Component II was placed into Squier's Tule Lake Phase. The only radiocarbon date for the Pennisula Bay site was from a house beam, dating Component III to A.D. 803+/- 160. This date unfortunately does not seem compatable with the Tule Lake Phase or a historic Modoc village.

Another large midden site, this one on Lower Klamath Lake, the Merriman Site (CASIS258), was salvaged by a crew from the University of California, Davis (Johnson 1966). The midden had no apparent physical stratigraphy and was reported to have a rather uniform assemblage of artifacts. Because of the presence of both cremations and flexed burials in the site, each localized in different areas, it seemed likely the site had two components, both of which would fall into the early Tule Lake Phase. There was a complete absence of historic debris and Desert Side-Notched points. The most abundant faunal remains were fish bones, followed by large mammal and waterfowl bones. Plant processing equipment was also present. Johnson notes the subsistence activities of the inhabitants of the Merriman Site were adapted to a lakeside environment.

In 1971, an archaeological survey of the Lava Beds outside of the monument was completed, locating 166 prehistoric and historic sites, the vast majority chipping stations (Fox and Hardesty 1972). It was concluded that the interior of the Lava Beds may not have been used until the recent prehistoric period. It was noted the Lava Beds, though historically within Modoc territory, may have been used frequently by Achomawi until the late 1700's. In a later article on the same material, Hardesty and Fox (1974) reiterated their opinion that the Modoc had moved into the Tule Lake area as late as 1780.

The presence of people within the Klamath Basin was extended back by excavation of CASIS342 in Butte Valley (Jensen and Farber 1982). The projectile point types dated the site to between 10,500 and 7,500 B.P. The point types resemble those from the lower levels of Cougar Mountain Cave and Lake Parman. The most recent types resemble Hasket points. The projectile points and other flaked stone tools indicated the site had been used as a hunting camp.

One of the most interesting, but internally complex sites within the

Klamath Basin, Nightfire Island, was excavated in the early 1960's. Its final analysis and interpretations were not published until the 1980's (Johnson 1969,Sampson 1985). The major focus of the interpretations dealt with questions as to whether the site's occupants over its seven thousand year prehistory had to learn how to fully and effectively exploit the lakeside environment or had they come to the site around 4500 B.C. already knowledgeable in the nuances of exploiting a marshy, lakeside environment. This question was not resolved; however, there were indications that the early occupants of Nightfire Island were not experts at utilizing lake-marsh resources. By extension this perspective might apply to the entire Klamath Basin and, as Aikens (1985) has noted, likely applies to the use of the lake-marsh environment of the Great Basin as well. Initially the site was a temporary camp apparently for the capture of waterfowl, but other activities also were carried on simultaneously, particularly hunting of terrestrial mammals. It was not until approximately 3000 B.C. that the site was used as a permanent village. The site was abandoned, then reestablished as a village, and abandoned again. Its use during the more recent period apparently shifted away from a semi-permanent village to a more special use site. The last occupation appeared to be a fish camp. As to the question of lake-marsh exploitation, there seems no doubt by 600 B.C. the occupants knew how to effectively exploit the lake-marsh environment. Before this time there was no clear indication of the degree of expertise of the occupants though the earliest inhabitants certainly seemed to lack the equipment and the knowledge to catch anything but easily caught coot. Two points of contrast between Nightfire Island data and the data recovered by Cressman at Kawumkan Springs was the almost total lack of any indication of the use of fish until 600 B.C., and the lack of any development of specialized mullers signaling the use of wocus throughout the entire history of the site. These differences, of course, may have stemmed totally from the more specialized use of Nightfire Island; however, its use as a semi-permanent village from 3000 B.C. to 600 B.C. indicates differences in lake-marsh adaptation within the Klamath Basin before 600 B.C.

Two sites more recently excavated within the basin reiterate the use of special camps or stations within the more recent prehistoric period. Sheepy East 1 (McGuire 1985) on Lower Klamath Lake dates from approximately A.D. 700 to A.D. 1400. The main activities performed on at the site were fish procurement and antelope hunting; each done presumably at different times of the year. The site does not appear to be a habitation site. A second site, Coyote Hills Rockshelter, has also been described as a temporary camp with only flaked stone tools and terrestrial faunal remains (Slettelland 1984). This site was dated by radiocarbon to A.D. 865.

This pattern of special use camps or stations presumably tied to permanent villages mirrors the ethnographic situation for the Modoc. This would seem to be a pattern present within at least the southern portion of the Klamath Basin for the last 1500 years. Before that time the pattern may have been one in which groups moved base camps throughout an area exploiting resources as they became available. The Modoc pattern used both a winter and summer village tied to stations or special purpose camps (Ray 1963). This was not the pattern for the Klamath who had a single permanent village and special purpose camps.

One additional question must be addressed for Klamath Basin prehistory, the role of trade relationships. Trade within the basin and between its tribes and those outside the basin have been recorded within the protohistoric and historic period. Modoc-Klamath trade was especially important after 1835 when it centered on slaves and horses. However, it is clear that trade in obsidian and even finished manufactured products have moved through the basin both from the west and the south. Though Modoc were constantly at war with Shasta and Achomawi, they still maintained trading relationships. Shells and Shasta bows were traded by the Modoc to the Achomawi, even though the Achomawi had direct trading relationships with Shasta, trading obsidian for shells. The presence of shell in the form of ornaments is clearly evident very early within the Klamath Basin sites. Some of that shell presumably came up the Klamath River. However, the small amount of shell ornaments from Upper Klamath River Canyon sites, seemingly limited to the Middle Period, would indicate the Modoc and Klamath receiving shell ornaments from other sources than the inhabitants of the canyon at least within the period from about A.D. 800 until contact.

UPPER ROGUE RIVER

Within southwest Oregon, primarily the upper Rogue River drainages, archaeological investigations also began in the 1930's by Luther Cressman

(1933a, 1933b). Between 1930 and 1932 he supervised the excavations at the Gold Hill Burial Site. The site included thirty-nine burials and over twenty-five occupation areas and workshop areas. The occupations and burials covered a considerable period of time. Many of the burials contained large obsidian blades; others were buried with shell and pine nut beads. Cressman (1933a, 1933b) noted that many of these items were found among the tribes of Northwest California. Clearly the grave goods indicated relationships between people along the Rogue River to cultural groups to the east (obsidian), south (pine nut beads) and west (shell beads). More recent work within the upper Rogue River drainage basin have not changed the impressions made by the work at Gold Hill. The Ritsch Site (35JO4) was salvaged in 1976 (Wilson 1979), revealing three circular house pits. The site had two components; the most recent dated by radiocarbon to A.D. 1500, the older to approximately A.D. 500.

Several archaeological projects along Lost Creek and Elk Creek within the last twenty years have greatly enlarged the understanding of the prehistory of the upper Rogue River. The Lost Creek Project was conducted between 1966 and 1972 (Cole 1966; Davis 1968a, 1968b, 1970, 1974). Several sites were tested, allowing Davis to propose a tentative cultural chronology for the area. The earliest occupation, Phase I, was found above a presumed Mazama Ash deposit and dated to 4000 B.C. The Gold Hill Leaf point was associated with this phase. Phase II was associated with side-notched points, keeled end scrapers and milling stones. Phase III, with a beginning date of 1000 B.C., was characterized by mortars and pestles, micropoints or Lingo points and triangular, stemmed points. Phase IV, the most recent prehistoric occupation dated from A.D. 1400 to A.D. 1850. It is associated with hopper mortars and Gunther Barbed points. Throughout these phases hunting and seed processing were important subsistence activities and fishing is assumed to be important (Davis 1974).

A second large project was begun on Elk Creek in 1973 and has continued into the present. An extensive excavation phase of the Elk Creek Project was completed in 1986 (Pettigrew and Lebow 1987). The excavation of three sites permitted some interesting hypotheses for the prehistory of the upper Rogue River drainage and southwest Oregon as a region. A proposed regional chronology for southwest Oregon was based upon archaeological data from the Rogue River drainage and the Middle

Fork of the Coquille River. The chronology has one stage and four phases, two of which include subphases. The oldest is the "Paleo-Indian" Stage identified by the presence of fluted points. The next chronological unit in the sequence, the Applegate Phase, dates roughly from 8500 to 6500 B.C., and it is represented by only one site on the Applegate River. It is characterized by square-base lanceolate points and edge-faceted cobbles. The third phase, Marial, is divided into two subphases: Marial 1, dating from 6500 to 3500 B.C. with an assemblage dominated by very large willow leaf points and edge-faceted cobbles and Marial 2, 3500 to 2500 B.C. , which shows a decline in edge-faceted cobbles and an increase in large willow-leaf points and straight base side-notched points. End-scrapers are very numerous in both subphases, as is a heavy use of obsidian; the McKee Uniface also associates with these subphases. The Coquille Phase dates from 2500 to 250 B.C., dominated by a point type known as a Coquille Stem Broad Base and medium willow-leaf points. There is also a dramatic decline in obsidian consumption. The most recent phase, the Rogue, dates between 250 B.C. and the historic period, and it is divided into three subphases and one period. In general this phase has a high number of narrow-necked projectile points assumed to be arrow points, a low number of end scrapers and a low consumption of obsidian.

The Rogue 1 subphase is characterized by Coquille Stem Narrow Base points, which could be labeled Gunther Stemmed, and the limited presence of two other point types named Elk Creek Square Barbed and Small Willow Leaf. The Rogue 2 Subphase is dominated by Rogue River Barbed, which could be labeled Gunther Barbed. It dates from A.D. 350 to contact. A special Ceramic Period within some sites of this subphase dates to A.D. 900 to 1500 and is marked by the presence of Siskiyou Utility Ware within the Elk Creek drainage. The last subphase, Rogue 3, is the post-contact period, with sites containing Euro-American trade goods.

Pit house villages seem to be restricted to the Rogue Phase with the possible one exception of a house pit within a site on the Applegate River. The houses within the Elk Creek sites are circular with a central firepit; however, one rectangular house floor was uncovered. From the faunal remains and the range of activities indicated by the tool assemblage within the houses it was proposed these were occupied year round. The faunal remains indicated the importance of elk and deer; while the groundstone tools and some floral remains indicated the importance of plant foods. The importance of fish was assumed, though there is no direct evidence. The use of Medicine Lake Highland obsidian changes through time possibly indicating the greater difficulty in acquiring it from the Klamath River peoples. Sites furthest from the confluence of Elk Creek with the Rogue have evidence for the acquisition of obsidian from the Klamath Basin (Pettigrew and Lebow 1987).

MIDDLE PIT RIVER

Along the middle Pit River there have been many archaeological surveys but few extensive excavations. Within the Lake Britton, Big Bend and Pit River Canyon Localities there were seven archaeological projects between 1952 and 1969, which recorded 94 sites and included limited testing of twelve (Johnson 1982). These studies were primarily concerned with settlement pattern and site locations. Most of the sites were fairly large middens, but there were 28 housepit sites, which had from one to thirty-three housepits. These sites were well located for the exploitation of salmon runs below the Pit River Falls, mussel beds within the Pit River, oak and digger pine. Recently, more extensive testing and excavation within the Lake Britton Locality have greatly expanded the understanding of the prehistory of this area. The first phase consisted of an expanded survey of the Lake Britton Locality (Peak & Associates 1984). This was followed by a testing phase which resulted in a cultural chronology for the area (Kelly et al 1987).

The cultural chronology for Lake Britton is characterized solely by projectile point types and associated radiocarbon dates within the area. Period I dates from 5000 to 3000 B.P. and is characterized by Northern Side-Notched points and other medium to large side-notched points. Elko Series points characterize Period II, dating from 3000 to 1200 B.P. Period III is characterized by Rosegate and Gunther Series projectile points, dating from 1200 to 500 B.P. The most recent period, Period IV dates from 500 to 100 B.P. with Desert Side-Notched points and the continuation of Gunther Series points. There are house pit villages, large midden sites, small midden sites, lithic scatters and burials on the terraces of the Pit River throughout this area. It was noted the largest villages seem to be on the first terrace with small house pit clusters on higher terraces often directly above the first terrace sites. The village sites indicated year round occupation with the use of a variety of resources including salmon, deer, mussels and plant foods. Two of the sites investigated in this area had specimens of Siskiyou Utility Ware. A small assemblage comes from a tested area of CASHA386 (Kelly et al 1987). The context of these specimens was dated by radiocarbon to A.D. 1710, but the sherds are in the bottom of a pit and could be mixed with more recent material. If this is an accurate date, it is the most recent example of Siskiyou Utility Ware within the Western Cascades.

Further upstream on the Pit River there have been archaeological studies in the Fall River Valley, Little Hot Springs Valley and Big River Localities. Most of those were surveys without excavations. Two sites were tested in Fall River Valley: the Callison Site (CASHA52) and the MacArthur Swamp Site (CASHA162). Both were large village sites with several housepits and heavy deposits of freshwater mussel shell in deep middens (Johnson 1982). The Callison Site also contained several burials, which were accompanied by pine-nut beads, shell beads and ground stone slabs. The data from this site has never been analyzed and reported upon.

The Lorenzen Site (CAMOD250) was excavated in 1960 (Baumhoff and Johnson 1968). It is a large housepit village with an associated deep midden within Little Hot Springs Valley. The projectile point sequence from the Lorenzen Site was used to give archaeological evidence for the Palaihnihan culture history described by Baumhoff and Olmstead (1963, 1964). Their proposed projectile point sequence indicated the site had been used from Early Horizon to the recent period by people with cultural ties to Northern and Central California, rather than to the Northern Great Basin. This site also contained Siskiyou Utility Ware, here dated to approximately A.D. 1400.

APPLEGATE RIVER AND UPPER SACRAMENTO RIVER CANYON

Though not in areas adjacent to the Upper Klamath River Canyon, two other area should be briefly discussed when considering the larger regional setting of the Upper Klamath River prehistory; these are the Applegate River drainage and the upper Sacramento River canyon. The Applegate data is relevant, because house pit sites investigated can be compared to the Upper Klamath structures. Some of the projectile point sequence may also have some relevance.

The cultural chronology for the Applegate River covers at least the last 8000 years. The earliest site in the area 35JA53, a seasonal base camp for hunting and gathering, seems to represent what has been described as a pioneering population (Brauner and Nisbet 1983). Its date of 8000 B. P. was determined from projectile point types and geological context. Unfortunately, the cultural sequence from the Applegate River lacks radiocarbon dates and must rely on projectile point typology and geological context for its chronology. Though some grinding slabs and ground cobbles exist within this earliest component, these tools and other grinding tools, such as mortars, become prominent with the following components. The sequence goes from an early period into the protohistoric period. House pits were associated with the Late Prehistoric period by Brauner and Nisbet (1983); however, Pettigrew and Lebow (1987) reevaluated one of the house pit sites, 35JA47, suggesting the projectile points and McKee Unifaces on the floors indicated these house pits dated to a much earlier period. The house pits were circular, about 5 m in diameter and constructed with floors 70-80 cm below the rim. There is a central fire hearth area but no well defined fire pit. There is the possibility of roof supports of stone on the house floors. There were two fired clay figurines found within a component directly below the house floors. These seem similar to those found within the Western Cascades (Mack 1989b). If the two figurines are from a component older than the house floors, the floors probably do not date to the Marial Phase as suggested by Pettigrew and Lebow (1987). The earliest components do not compare to any components from the Upper Klamath River Canyon. However, the components dating to what Pettigrew and Lebow (1987) label the Marial 2 subphase do contain similar projectile points: Gold Hill Leaf and McKee Unifaces. The Late Prehistoric components share projectile point types: Gunther Series and Desert Side-Notched. The protohistoric house pit site with evidence of a rectangular house and Euro-American items does not have a comparable assemblage on the Upper Klamath River.

The recent work within the Upper Sacramento River Canyon gives a cultural sequence for an area of northern Californa. Basgall and Hildebrandt (1987) distinguish three phases, two of which overlap temporally. Indications for an early occupation are better confirmed at Squaw Creek (Clewett 1977, Clewett and Sundahl 1983). The earliest components within the canyon are termed the Pollard Flat Phase, dating from 5300-2700 B.P. and associated with three major point types: Squaw Creek Contracting Stem, MeKee Unifaces and Pollard Diamond-Shaped. This phase's settlements are residential base camps, with hunting and plant processing of importance. The Vollmers Phase is thought to overlap the Pollard Flat Phase. It dates from 3900- 2100 B. P. and is characterized by Clikapudi Series points and small short duration residential base camps. During the time of phase overlap, the researchers propose different seasons of use for the canyon by two different groups. The most recent phase, Mosquito Creek, dates from 1900 to the historic period. Its projectile point assemblage is dominanted by Gunther Series points, with the addition of Desert Side-Notched points within the most recent time. Continued small seasonal occupations with no major villages characterize this phase. The most recent inhabitants of the canyon did not represent Shasta Complex groups, as the use of andronomous fish and heavy reliance on acorns was not evidenced. The large, complex sites associated with Shasta Complex seem not to exist within the canyon, but can be found further downstream along the Sacramento River and its tributaries (Basgall and Hildebrandt 1987). This study provides some interesting information on projectile point types found not only within the canyon but within the larger regional context of northern California. Their discussion of Gunther Series and small to medium side-notched points have relevance to Upper Klamath River Canyon.

CHAPTER 5-SUMMARY AND CONCLUSIONS ON UPPER KLAMATH RIVER PREHISTORY

This chapter summarizes data gathered for the Upper Klamath River Canyon resulting from three different archaeological investigations conducted between 1961 and 1986. It presents a general characterization of subsistence, settlement and technological behaviors placed within a chronological framework, presented as a cultural chronology with four phases (Table 14). It also briefly assesses the prehistoric cultural resource potential for the Upper Klamath River Canyon. Because the inhabitants of the canyon were never isolated, potential intercultural relationships and outside cultural influences from adjacent areas must also be considered.

CULTURAL CHRONOLOGY

A cultural sequence with some chronological control is possible for Upper Klamath River Canyon, if we consider the evidence from the few extensively excavated and tested sites and the prehistory of some major adjacent areas: the Klamath Basin, the Upper Rogue River, and the Middle Pit River. The evidence is still far from complete, and we must rely on only a few radiocarbon dates and time sensitive artifacts, particularly projectile points.

Within the canyon only one possible bit of evidence indicates the use of the canyon before 5500 B.C. A single Eden projectile point from the surface of 35KL18 suggests the possibility of people using the canyon before 5500 B.C. Made of fine grain basalt, the point seems to be made of local materials, not imported from the Rocky Mountains. Within the Klamath Basin, a few sites indicate use of the region by 10,000 B.P., the nearest being CASIS342 in Butte Valley approximately 13 miles (18 kilometers) south of Upper Klamath River Canyon (Jensen and Farber 1982).

The earliest firm evidence for occupation of the canyon comes from Stratum I of 35KL21 which contains a small collection of generalized bone tools and a few unifacial flaked tools dated by radiocarbon to 7646 +/- 400 B.P. (5696 B.C.). Very little of this stratum was excavated in 1962.

TABLE 14: CULTURAL SEQUENCE FOR THE UPPER KLAMATH RIVER

PHASE	ESTIMATED PERIOD	CHARACTERISTICS
CANYON	250 BC - Contact	Dominance of small, narrow-necked projectile points. Type I knives present, ceramic vessels and/or figurines, bone tools prominent. House pit villages. Specialized mullers. Population increase.
Canyon 3 Subphase	AD 1600 - Contact	Appearance of DSN, Gunther Barb dominant, Rose Spring series present, no ceramics. Mammal bone beads.
Canyon 2 Subphase	AD 900 - AD 1600	Gunther Barb dominant and Rose Spring series. Ceramics--pottery at 35KL16, figurines more widespread. Mammal bone beads.
Canyon 1 Subphase	250 BC - AD 900	Gunther Series dominant, Type 24 also present in downriver sites. No ceramics. Gunther Stemmed important. Shell beads, bone tools for fishing, bone chisels and wedges.
RIVER	2500 BC - 250 BC	Class 28, Elko series, Gold Hill Leaf, Siskiyou Side-Notched. Mullers, mortars, bone tools for fishing, bone chisels and wedges. Martis series.
BASIN	4500 BC - 2500 BC	Large projectile points. Humboldt Concave Base, McKee Uniface, Northern Side-Notched. Stone bowls, mullers, mortars, bone tools.
SECRET SPRING	5500 BC - 4500 BC	Bone tools--general.

resulting in an extremely small sample of tools and faunal remains. The cultural material associated with this date is too limited to allow a reconstruction of cultural behaviors. The evidence indicates hunting of turtles and mammals; presumably the site was a small, temporary hunting and gathering camp. Within southwestern Oregon and northern California, the limited evidence for this period seems restricted to such camps, associated with large wide-stemmed and large willow-leaf projectile points. This evidence comes from one site within northern California, Squaw Creek (Clewett 1977, Clewett and Sundahl 1983), and two sites within southwest Oregon, 35JA52 and the Marial Site (Pettigrew and Lebow 1987). As yet, no large wide-stemmed or large willow-leaf points have been recovered from the canyon. This cultural period is provisionally named the Secret Spring Phase, with estimated dates from 5500 B.C. to 4500 B.C.

The earliest well documented phase within the canyon has been named the Basin Phase, with dates from 4500 B.C. to 2500 B.C. Represented by several projectile point types (Humboldt Concave Base A, Northern Side-Notched, and McKee Unifaces), several sites within the canyon have components for this phase. These include 35KL16; Strata I and II at 35KL18; 35KL19; Strata I and II at 35KL21; and the midden at 35KL25. The canyon lacks radiocarbon dates for this phase.

The following River Phase occupations are characterized by Gold Hill Leaf, Elko Series, Siskiyou Side-Notched, Class 28 and Class 29 projectile points. The dates for the phase bracket 2500 B.C. to 250 B.C. and are based primarily on the projectile point types. The Gold Hill Leaf, Elko, Class 29 (which resemble Martis Series points), and Siskiyou Side-Notched points were all identified within dated contexts at Nightfire Island (Sampson 1985; Hughes 1986). The Gold Hill Leaf, Siskiyou Side-Notched and Class 28, which resembles Clikapudi Corner-Notched points in northern California (Basgall and Hildebrandt 1987), come from dated contexts within southwest Oregon and northern California (Pettigrew and Lebow 1987; Basgall and Hildebrandt 1987). Again there are no radiocarbon dates from the canyon for this phase. Several sites within the canyon seem to have components from this phase: 35KL16; 35KL18; 35KL19; 35KL21, Strata II and III; 35KL25; 35KL554; and 35KL578.

The Canyon Phase, being most recent, is well documented with a higher level of evidence to support it. It dates from 250 B.C. to A.D. 1850 and is divided into three subphases: Canyon 1 (250 B.C. to A.D. 900), Canyon 2 (A.D. 900 to A.D. 1600) and Canyon 3 (A.D. 1600 to 1850). Canyon 1 occupations contain Gunther Stemmed, Gunther Barbed and Class 24 projectile points; the Gunther Series is dominant, Class 24 only being found within downriver sites. The Gunther Stemmed appears higher in frequency than the Gunther Barbed. Two time sensitive bead types were recovered from the lower part of Stratum III at 35KL21 and from the midden at 35KL20: a Type F2b Saucer Bead (A.D. 100-A.D.500) and a Type G3a Olivella Ring Bead (200 B.C.-A.D. 100). There are also two radiocarbon dates for this phase from the lower part of Stratum III at 35KL21: 1009 +/- 110 B.P. (A.D. 941) and 1296 +/- 125 B.P. (A.D. 654). This subphase can be recognized at 35KL18, Housepits 11 and 13; 35KL19; 35KL20; and 35KL21, Stratum III.

Canyon 2, characterized by Gunther Barbed and Rose Spring Series projectile points, has radiocarbon dates from housepits and middens. At 35KL16, Housepit 1, Floor 3 has a date of 580 +/- 120 B.P. (A.D. 1370), the midden has an almost identical date of 580 +/- 100 B.P. (A.D. 1370) and there is a date of 970 +/- 80 B.P. (A.D. 980) from the lower deposits of Housepit 14. A date of 564 +/-110 B.P. (A.D. 1386) comes from Housepit 3 at 35KL18; a date of 580 +/-60 B.P. (A.D. 1370) comes from 35KL19; and, three dates come from two housepits at 35KL26 [400 +/- 50 B.P. (A.D. 1550), 380 +/- 80 B.P. (A.D. 1570), and 330 +/- 60 B.P. (A.D. 1620)]. This clearly seems the most intensive period of occupation. In addition, other sites also seem to date to this phase by the large number of Gunther Barbed points within their assemblages. The other time sensitive artifact for this phase within the downriver villages is Siskiyou Utility Ware. Additional sites which appear to date to Canyon 2 include 35KL21, 35KL22, 35KL23, 35KL25, 35KL554, 35KL578, and CASIS16.

The final subphase, Canyon 3, is characterized by a continued use of Gunther Series points, Rose Spring Series points and the addition of Desert Side Notched points. However, with the exception of figurine fragments, ceramics would not be characteric of this subphase even within downriver sites. This negative evidence, the total lack of pottery from the Irongate Site (Leonhardy 1961) and from 35KL26, currently remains the main criteria for distinguishing Canyon 3 from Canyon 2 . Sites representing this period include 35KL16, 35KL18, 35KL20, 35KL21, 35KL22, 35KL26, and 35KL634. The only radiocarbon date for this subphase is from a housepit at 35KL20, 100 +/- 70 B.P.(A.D. 1850). The lack of Euro-American trade goods at Native American sites within the canyon indicates permanent occupation of the canyon ended by the early 1800's.

The canyon may have been used by people at least as early as the Klamath Basin and the upper Sacramento River Canyon areas. It is possible its use matches in age the occupation of southwest Oregon (Pettigrew and Lebow 1987) and the Middle Pit River (Kelly et al 1987).

The cultural chronologies for northern California and southwest Oregon are heavily dependent on projectile point typology for the phase or period characterizations. This is unfortunate, as many projectile point types within these areas are often not clearly defined, nor are they always clear temporal markers. Some of the projectile point series are so broadly defined they can not be considered more than broad temporal indicaters. The "Gunther Series" is one example. The series dates from A.D. 250 to the historic period (Hughes 1986), basically covering the period of the use of the bow and arrow. For this study, the Gunther Series so broadly defined is not used; rather a distinction is made between Gunther Barbed and Gunther Stemmed. Within Upper Klamath River Canyon the Gunther Barbed appear to be more recent in time while Gunther Stemmed seem slightly older. The criteria to separate the two can be found in Appendix C. To be typed as a Gunther Barbed point, the point must be basally notched and have barbs as long or longer than the contracting stem. Gunther Stemmed points must have barbs shorter than the stem and not be merely shouldered.

The criteria for Siskiyou Side-Notched points also needs to be carefully adhered to if it is to have any validity within the region. The neck width must be at a ratio of 2.0 to 2.2 to the width of the point. In other words, the notches are relatively deep and they must be open, U-shaped notches. In general, the length of this type falls midway between Northern Side-Notched and Desert Side-Notched dimensions, but this criteria alone is not sufficient for classifying a side-notched point as Siskiyou Side-Notched. It is not intended to become a "catch all" category for a certain size of side-notched point. As Hughes (1986) has pointed out, there are some problems with the use of Great Basin point types within the Klamath Basin and other regions to the west. However, this study assumes the use of metric criteria after Thomas (1970) permits the use of some Great Basin point types within this transitional area.

SUBSISTENCE AND SETTLEMENT PATTERNS

In addition to the time markers, each of the phases and subphases have other artifacts and faunal remains associated with them. Some of these occur throughout the time sequence. Mammal bone, generalized bone tools and unifacial flaked tools were recovered from even the oldest stratum in the canyon. A basic hunting/gathering behavioral base exists within the canyon throughout the documented 7500 years of prehistory. If the excavated sample from the Secret Spring Phase (5500-4500 B.C.) was larger, it would undoubtedly include projectile points, knives, scrapers, gravers and some ground stone tools. One can look at the artifact inventories from sites of comparable age within the Klamath Basin, southwest Oregon and northern California to visualize the total assemblage likely for this phase of Upper Klamath River Canyon prehistory.

The slightly larger sample from the Basin Phase (4500-2500 B.C.) does indeed include ground stone tools, portable mortars, mullers and stone bowls. In addition, there are cores, gravers, knives and scrapers. One of the burials recovered in 1961 from 35KL18, Stratum I, indicated a burial practice of supine position within a burial pit covered with rocks. The faunal remains were Western Pond Turtle and large to small mammals. The evidence points to generalized hunter/gatherers who probably used the canyon seasonally.

During the River Phase (2500-250 B.C.) evidence of more specialized bone tools first appears. These tools include bone and antler chisels and wedges and barbs for harpoons or fishing gear. This corresponds to the period for the first evidence of the use of fish at Nightfire Island (Sampson 1985). Burials at 35KL18 midden and within Stratum III at 35KL21 were flexed burials placed on their sides. At 35KL18, two burials were within the same grave with a pile of rocks arranged near their heads. The apparent more sophisticated tool kit of this phase indicates greater reliance upon the river resources and, perhaps, base camps within the canyon. The faunal evidence indicates use during all seasons at this time.

The Canyon Phase (250 B.C.-A.D. 1800) contains evidence of the only housepits within the canyon, though it seems likely houses were used before this time as evidenced at Nightfire Island (Sampson 1985). The number of housepit villages during this phase signals a significant population increase for the canyon.

The dominance of small, narrow necked projectile points indicates a dependence upon the bow and arrow. The specialized mullers associated with wocus processing within the Klamath Basin appear at this time within the housepits. Bone tools are prominant within all the sites. Burials from this period are represented by two cremated burials at 35KL16. The presence of mammal-bone beads and an elk antler spoon associates these burials to both the Klamath Basin and to northwestern California and southwestern Oregon (Kelly 1930). It is within this phase that Siskiyou Utility Ware appears and then disappears. The other time markers for this period are Olivella shell beads from the Canyon 1 Subphase and Knife Type 1 for the entire phase. Clearly, the inhabitants by this phase efficiently exploit all the resources of the Upper Klamath River Canyon and have trade relationships with peoples further down the river and presumably with the Klamath Basin. The apparent abandonment of the canyon by the early 1800's may have a connection to the increased raiding of neighboring groups for slaves by the Modoc after 1835.

The pattern of specialized reliance on one or two major resources, which characterizes this period within the Klamath Basin and along the lower courses of the coastal rivers and the Sacramento River, does not seem to exist within Upper Klamath River Canyon. However, there does seem to be year-round residence within villages, rather than seasonal moves to two or three different base camps, as indicated in some areas of northern California and southern Oregon. The Upper Klamath River Canyon can be included within the Siskiyou Pattern as described by Connolly (1986).

ETHNICITY AND BOUNDARIES

Both Mack (1983) and Gehr (1986b) noted cultural differences between the upriver and downriver clusters of sites within Upper Klamath River Canyon. Mack suggested the difference might be explained by ethnic differences between the two parts of the canyon. The evidence still indicates differences between the two site clusters, particularly during the Canyon 2 Subphase. The artifact assemblage from the upriver housepit sites resembles the Late Prehistoric period within the Klamath Basin. This includes a high frequency of unifacial shouldered mullers, Gunther

Stemmed points, Key or T-shaped drills and housepits with similar features, including benches and storage pits within the floors. Also, the upriver sites lack Siskiyou Utility Ware and multifloored houses. The downriver sites have multifloored houses without storage pits in the floor, a high percent of Gunther Barbed points and Siskiyou Utility Ware. It still seems reasonable to propose the upriver sites as Klamath or Modoc and the downriver sites as Shasta or Upland Takelma.

Because Siskiyou Utility Ware currently has such limited distribution within Upper Klamath River Canyon and along the drainages of the upper Klamath River, and is so widely distributed along the drainages of the upper Rogue River, the Upland Takelma are still strong candidates for the occupation of 35KL16 during the Canyon 2 Subphase. This is strengthened by the presence of twisted tule basketry which can also be associated with the Upland Takelma (Drucker 1937). The Upland Takelma may have lived for a limited time (three or four hundred years) along the Klamath River and were then pushed out approximately 400 years ago by the Shasta. There may also be some connection between the distribution of Siskiyou Utility Ware and the proposed movement in waves of Penutian speakers out of southern Oregon into northern California (Whistler 1977). If the differences in beginning and ending dates for pottery-using village peoples along the Rogue, Klamath and Pit Rivers are sequencial from north to south, there may be a connection to the movement of people from southwest Oregon into northern California.

CONCLUSIONS

The Upper Klamath River Canyon may be described as an area of subsistence uniformity with variation in settlement patterns and cultural affiliations of the inhabitants throughout its prehistory. The use of turtle and mammals begins by 5500 B.C. during the earliest phase, the Secret Spring Phase. The exploitation of fish appears to begin much later at approximately 600 B.C. From the presence of plant processing ground stone tools, such as millingslabs, mullers and bowl mortars, the exploitation of seed plants within the canyon begins during the second phase around 4000 B.C. However, the sample of excavated materials dating from the earliest two phases remains very small. The deeper strata within the middens at 35KL18 and 35KL21 need to be more extensively excavated to determine accurately the subsistence patterns for these earlier occupations. Such excavations should use 1/8 inch mesh screens and flotation of fire hearth materials for maximum recovery of small faunal remains, particularly fish, and charred seeds and other plant remains. In addition, a detailed study of the potential plant resources and their locations within the canyon should be conducted. The ground stone artifacts also should be recovered when observed and analyzed to better understand the use and significance of plants to the canyon's inhabitants. A study should also be made of which months the various fish species once ran up the Klamath River as far as the Salt Cave Locality, and to what degree their availability could be affected by water flow levels, which might in turn be affected by climatic variations, particularly effective moisture.

The settlement pattern for the Upper Klamath River Canyon appears to have changed over time. Small, temporary campsites of a mobile population are associated with the earliest phase. By 4500 B.C., the Basin Phase, large, seasonal campsites were used within the canyon, presumably part of a seasonal round which included adjacent areas at other seasons of the year. Again, the evidence is limited due to the small excavated sample of the deeper midden strata of 35KL18 and 35KL21.

Because the oldest radiocarbon date for a house pit within the canyon is A.D. 900, it has been hypothesized the village sites date from the Late Prehistoric Period. However, house pits were used by the inhabitants of the Klamath Basin from a much earlier date; therefore, it seems possible the inhabitants of the canyon began to live in house pits previous to the Late Prehistoric Period. A larger sample of dated house pits from the canyon might expand the period of house pit occupation or confirm a rather late use in the canyon of pithouse villages. One strategy would be to radiocarbon date samples of charcoal recovered during the 1961-1963 excavations. This would allow the dating of two additional houses at 35KL18, one tested house at 35KL22, and two houses at 35KL16. In addition, excavation of house pits from other large housepit villages, such as 35KL26 and CASIS1198, would determine if they all date from the Late Prehistoric Period. The smaller hamlets should also be tested to determine if they also date from this period. In addition, a greater number of securely dated strata and house floors would test the possibility that Gunther Barbed points are more recent than Gunther Stemmed within the downriver site cluster. The more precise dating of Siskiyou Side-Notched points within the canyon should also be determined by additional radiocarbon dates.

Within the Late Prehistoric Period, certainly by the Canyon 2 Subphase, the population of the canyon lived in pithouse villages year-round. The large midden sites adjacent to the river were fishing camps and fish processing areas. Within the uplands there were small, special purpose camps. The excavation of a selected group of small, upland camps could confirm their seasonal, specialized use. In addition, the hypothesis that the large midden sites near the river were fishing and fish processing areas for the villages during the Canyon Phase could also be tested by more extensive excavation of these sites.

The limited spatial and temporal distribution of Siskiyou Utility Ware within the Upper Klamath River Canyon leads to the hypothesis that the downriver site cluster, particularly 35KL16, was occupied for a few hundred years by Upland Takelma, then later occupied by Shasta. The more precise dating of the various house floors with pot sherds could help confirm this hypothesis. Wooden house beams and charcoal recovered in 1963 could be radiocarbon dated, so each floor in each excavated house at 35KL16 could be dated. This would give a more precise time span for the pottery in the site, as well as a more precise knowledge of the time span of the site's occupation. Complete excavation of two additional house pits at 35KL16 would also help confirm the temporal limits of Siskiyou Utility Ware during the site's occupation, as it apparently was not present within Housepit 14. The possible uniqueness of House Pit 1, which may reflect status differences, would also be tested by further excavation. In addition, screening of all materials from any additional excavations through 1/8 inch mesh screens would reveal a more complete faunal assemblage, particularly fish. The recovery of shell beads, which have not as yet been recovered from this site, may also occur with use of a finer mesh screen.

The cultural influences from adjacent regions has been noted by the presence of particular artifacts within canyon sites. The assumption has been among archaeological researchers working within Upper Klamath River Canyon that the inhabitants traded with Klamath and Modoc to the east, probably with Achomawi to the south, and Shasta further to the west. Obsidian and shell ornaments are likely commodities. The sites within the canyon contain a great deal of obsidian but very few shell artifacts have been found, and those have been limited to 35KL20 and 35KL21. Excavation of a sample of downriver and upriver sites using 1/8 inch mesh screens would allow a reasonable sample to test the importance of shell ornaments to canyon inhabitants throughout the canyon's occupation.

The obsidian from the canyon's sites needs to be sourced to determine from which direction the obsidian has come and whether its major source or sources have remained constant through time. In addition, an analysis of the obsidian debitage could help determine what form the obsidian entered the canyon. Because of the small number of obsidian cores recovered from canyon sites and the large number of small, flake debitage of obsidian, it has been proposed that obsidian entered the canyon as roughouts and blanks.

There have been several hypotheses concerning the prehistory of Upper Klamath River Canyon. Some of these concern chronology, some subsistence and settlement patterns, some ethnic boundaries and some cultural interaction with surrounding areas. Many can be tested by a combination of further analysis of already excavated materials and more extensive excavation of selected sites within the canyon. Future analysis of the materials should include more detailed and sophisticated methods, and the excavation should use recovery methods which guarantee the maximum recovery of data.

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APPENDIX A

DESCRIPTIONS OF SELECTED SITES

1. 35KL16 Border Village (S.C. 1 or Site 1)

Housepit village and midden with 19 housepits has one completely excavated housepit and partial excavation of four others. Housepit component dates to the Canyon 2 Subphase. Other possible components during Canyon 3, Canyon 1, River Phase, and Basin Phase. Site is located on first terrace of the river within a mixed oak and ponderosa pine open forest. The diversity of tool types within the houses and midden couple with the abundant faunal remains indicates a year round occupation of the village. Older components may be seasonal base camps.

2. 35KL18 Big Boulder Village (S.C. 4 and Site 3)

Housepit village and deep midden, with 41 housepits; three housepits completely excavated with limited testing of the midden. Housepit components probably date to the entire Canyon Phase with a radiocarbon date of A.D. 1386 from one housepit for Canyon 2. Older components present include River and Basin Phases. Site located on a grassy first terrace of the river, oaks and ponderosa pine border the site area away from the river. The diversity of tool types and faunal remains indicate year round occupation of the village during Canyon Phase. Probably large seasonal base camp during older two phases. A large boulder with cupulas sits near the east end of the site.

3. 35KL19 Frain South Field (S.C. 5 and Site 4)

Large, shallow midden site with possibility of housepits obscured by plowing. Test excavations produced a range of artifacts and three radiocarbon dates of A.D. 1370, A.D. 1720, and A.D. 1740 from Canyon 2 and 3 Subphases. Older components possibly present include Canyon 1, River Phase and Basin Phase. Site located on a grassy terrace about 15 meters above the river, probably a second terrace with oaks and ponderosa pine on the margins of the site. The remains of turtle and mammal and flake stone tools hints at year round occupation or more than one season of occupation for a base camp. A large number of gravers and unifacial flaked pointed tools indicates activities of engraving and boring of wood and bone.

4. 35KL20 Klamath Shoal Village (S.C. 6 and Site 5)

Housepit village with a shallow midden which grades into the midden deposit of 35KL21. Of twelve housepits, one dated to A.D. 1850. There is at least one rock ring. Site minimally tested. Evidence for use as a village during Canyon 3 Subphase. Canyon 1 Subphase component is indicated by the presence of Olivella Ring Shell Bead. It is located on second terrace among ponderosa pine and oaks. The diversity of tools and faunal remains indicate year-round occupation of the village.

5. 35KL21 Klamath Shoal Midden (S.C. 7 and Site 6)
Large, deep midden site, with three major strata. Radiocarbon dates indicate occcupation during the Secret Spring Phase (5696 B.C.) and Canyon 1 Subphase (A.D. 654 and A.D.941). Other components present include Basin and River Phases and Canyon 2 and 3 Subphases. Great diversity of tool categories and faunal remains indicate an important seasonal base camp used during more than one season of the year. May have been fish processing area during village occupation. Site is located upon first terrace of the river just below 35KL20. 35KL20 and 35KL21 should be considered one site.

6. 35KL22 West Bank Pine Village (S.C. 8 and Site 7)
Housepit village with seven housepits, one of which has been tested. Probably dates to Canyon 3 Subphase; may also have been occupied during Canyon 2. Probably has been occupied year round as other Canyon Phase villages. It is located on the first terrace which is grassy with ponderosa pine and oaks.

7. 35KL23 Crayfish Creek Portal (S.C. 9 and Site 8)
Small housepit village; four houses with a midden. Midden is almost contiguous with the midden of 35KL566. Probably dates to the Canyon 2 Subphase and has been occupied year round. Both flakes and ground stone tools have been recovered from surface and small tested areas. The site is located on a small high terrace, possibly a third terrace among ponderosa pine and oak, adjacent to a small creek which flows year-round.

8. 35KL25 Aspen Village (S.C. 11 and Site 10)
Housepit village with ten houses and a midden. Houses probably date to the Canyon 2 and 3 Subphases; older components of River and Basin Phases are indicated by projectile points. Located on an upper terrace near Chert Creek within oaks and ponderosa pine. The diversity of tool categories indicates a year-round occupation, both turtle and mammal bone recovered. Tools indicate use of river resources, such as fish, important.

9. 35KL26 Men's Ceremonial Area (S.C. 12 and Site 11)
Housepit village with at least nine house pits in association with a midden. Radiocarbon analysis dates two house pits to the end of Canyon 2 or beginning of Canyon 3 Subphases (A.D. 1550, A.D. 1570, and A.D.1620). Projectile points indicate Canyon 3 and probably Canyon 2 Subphases. Site is located primarily on a brushy knoll overlooking Chert Creek, with two or three housepits located upriver from the main body of the site within

ponderosa pine and oak. Diversity of tool categories indicate year-round occupation and use of the river's resources.

10. 35KL552 Chert Creek Village (Site 14)
Small housepit village; 3 housepits in a shallow midden. No diagnostic artifacts for placing within the cultural chronology, except the assumption that housepit villages within the canyon date to the Canyon Phase. Limited testing did not afford enough information to accurately determine likely site use. Only flaked stone tools reported. Site is located on a small terrace of Chert Creek among ponderosa pine and oaks.

11. 35KL554 Camp Two (Site 16)
Large midden site, adjacent to the river on the first terrace. Could be a continuation of 35KL17, 20 and 21. Located among oaks and ponderosa pine, with willow near the river's edge. Wide range of projectile point types indicate occupation during the Canyon 1 and 2 Subphases and the River Phase. Only large mammal remains such as elk, deer and bear. Tool categories indicate a significant base camp.

12. 35KL576 Women's Ceremonial Area (Site 24)
Housepit village with nine house pits and an associated midden. It is located on the first terrace near a marshy area with pines and oaks. The range of tools recovered from testing indicate a year-round occupied village exploiting river resources. The lack of any diagnostic projectile points or other temporally diagnostic tools limits the ability to estimate where the site falls within the cultural sequence, other than assuming the house pits have been occupied during the Canyon Phase.

13. 35KL578 Orchard Camp (Site 27)
Large, shallow midden on second terrace of the river. Grassy area with oaks, ponderosa pine and the reminants of an orchard. Projectile points and the presence of one pot sherd of Siskiyou Utility Ware indicate one component dates to Canyon 2. There may also be components from Canyon 1 and River Phase. The testing has revealed a wide array of tool categories, including flaked and ground stone and bone tools. The site had a higher than expected frequency of notched and incurvate unifacial flaked tools possibly indicating manufacture of bone tools or wooden tools. The full range of faunal remains (fish, bird and mammal) indicate with the artifact evidence that this has been an important seasonal base camp or village; plowing for the orchard during historic times may have obliterated house pits.

14. 35KL634 Robber's Camp (Site 40)
Small lithic scatter probably severely eroded by the river. Temporal indications place it within the Canyon 3 Subphase. May have been a small

campsite on the first terrace of the river, which is grassy with oaks and pines along the margin of the site.

15. CASIS16

Rockshelter above the river near Beswick. It is above a grassy area overlooking the river's terraces. The temporal markers indicate occupation during the Canyon Phase. Artifacts indicate plant processing and hunting may have occupied the inhabitants of the shelter for short periods of time. It was most likely a short term, temporary camp.

TABLE 15: PREHISTORIC SITE COLLECTIONS ANALYZED

SITE	SITE NAME	Surface Collection	Test Excavation	Intensive Excavation
35KL16	Border Village	√	√	√
35KL18	Big Boulder Village	√	√	√
35KL19	Frain South Field	√	√	
35KL20	Klamath Shoal Village	√	√	
35KL21	Klamath Shoal Midden	√	√	√
35KL22	West Bank Pine Village	√	√	
35KL23	Crayfish Creek Portal	√	√	
35KL24	Salt Caves	√	√	
35KL25	Aspen Village	√	√	
35KL26	Men's Ceremonial Area	√	√	
35KL550	Flume View	√	√	
35KL551	Council Bluffs	√	√	
35KL552	Chert Creek Village	√	√	
35KL554	Camp Two	√	√	
35KL555	Hayden Creek Camp	√		
35KL556	Kerwin Camp	√		
35KL557	Kerwin Spring	√		
35KL566	Portal Annex	√	√	
35KL567	North Field Mounds	√	√	
35KL576	Women's Ceremonial Area	√	√	
35KL578	Orchard Camp	√	√	
35KL629	Shawn's Beach	√		
35KL631	Way Station Village	√		
35KL633	Don's Village	√		
35KL634	Robber's Camp	√	√	
35KL635	Hoover's Camp	√		
CASIS16		√	√	
CASIS1198	Coyote's Run	√		

APPENDIX B

MULLER CLASSES

Class 1
>8 cm long
>7 cm wide
>3 cm, <5 cm thick
.65 to .95 width-length ratio
.25 to .55 thickness-length ratio
Biface or uniface
Unshouldered or slightly shouldered
Flat or convex in longitudinal cross-section
Slightly shaped to unshaped
Lenticular in transverse profile
Circular to oval in plan view
Material: basalt, andesite, welded tuff and vesicular basalt

Class 2
>10 cm long
>5 cm wide
>3 to <4.5 cm thick
.55 to .75 width-length ratio
.30 to .45 thickness-length ratio
Biface or uniface
Unshouldered to slightly shouldered
Flat to slightly convex in transverse cross-section
Flat in longitudinal cross-section
Slightly shaped to shaped
Subrectangular in plan view
Subrectangular in transverse profile
Material: basalt, andesite and welded tuff

Class 3
>7 cm long
>5 cm wide
2.5 cm to 5.5 cm thick
.65 to .85 width-length ratio
.40 to .50 thickness-length ratio
Biface or uniface
Shouldered, slightly shouldered or unshouldered
Flat or convex in transverse cross-section
Flat or convex in longitudinal cross-section
Shaped to unshaped
Subrectangular to wedge-shaped in transverse profile

Subrectangular to oval in plan view
Material: basalt or andesite

Class 4
>8 cm long
>8.5 cm wide
>2 cm to <3.5 cm thick
.65 to .99 width-length ratio
.20 to .40 thickness-length ratio
Biface or uniface
Shouldered or slightly shouldered
Flat, convex or concave in transverse cross-section
Flat or convex in longitudinal cross-section
Unshaped
Wedge-shaped to lenticular in transverse profile
Diamond or triangular in plan view
Material: basalt or andesite

Class 5
>9 cm long
>7 cm wide
>2 cm thick
.70 to .99 width-length ratio
.10 to .40 thickness-length ratio
Uniface
Shouldered
Flat in transverse cross-section
Flat in longitudinal cross-section
Subrectangular in transverse profile
Oval in plan view
Material: volcanic sandstone or scoria

Class 6a
>8 cm long
>7.5 cm wide
>2.5 cm to <7 cm thick
.70 to .99 width-length ratio
.30 to .50 thickness-length ratio
Uniface
Shouldered
Flat in transverse cross-section
Flat to slightly covex in longitudinal cross-section
Shaped
Hemispherical, developmental or wedge-shaped in transverse profile
Circular, oval to subrectangular in plan view
Material: basalt, andesite, dacite, sandstone or vesicular basalt

Class 6b

>8 cm long
>7.5 cm wide
>10 cm thick
.70 to .99 width-length ratio
1.0 thickness-length ratio
Uniface
Shouldered
Flat in transverse cross-section
Flat in longitudinal cross-section
Shaped
Conical in transverse profile
Circular in plan view
Material: vesicular basalt

From Mack (1983:251-253)

APPENDIX C

PROJECTILE POINT TYPOLOGY

The critical attributes used to define the projectile point types were taken from Thomas (1970). The various attributes which he used have been taken with very little modification. The defining attributes of the Great Basin types, Type 2, 3, 5-9, and 11-18 were taken directly from Thomas. The other types and classes are defined by the author, using Thomas's scheme, which has been modified. These were originally developed for Mack (1979). Several of Thomas's attributes are angles and ratios. They are abbreviated in the following list of types. DSA is the angle formed between a line defined by the shoulder and a line drawn perpendicular to the longitudinal axis of the point. PSA is the angle formed between a line defined by the stem and a line drawn perpendicular to the longitudinal axis of the point. BIR is the ratio of the length of the longitudinal axis to the total length of the point. The BC is the length of the line from the tip of the blade to its base divided by the length of a line perpendicular to the first line from the point of inflection of the blade.

Type 1 Gunther Barbed
DSA < 160'
PSA < 100'
BIR < .90'
Stem length-barb length ratio 2.0
Weight < 3.0 grams; exception spear points
Triangular shape
Base convex or pointed
Barbs rounded or pointed

Type 2 Rose Spring Contracting Stem
DSA > 140'
PSA < 100'
BIR > .90
Triangular shape
Base straight, convex or pointed

Class 3 Rose Spring Corner-Notched
DSA < 195'
PSA > 100' and < 130'
Weight < 2.0 grams
Triangular shape
Base straight or conve
Basal width-maximum width ratio < .90

Type 4a Desert Side-Notched, General Subtype
PSA > 130'
Weight < 2.0 grams
Basal Width-maximum width ratio > .90
Length < 26 mm
Base concave

Type 4b Desert Side-Notched, Sierra Subtype
PSA > 130'
Weight < 2.0 grams
Basal width-maximum width ratio > .90
Length < 26 mm
Base notched

Type 5 Eastgate Expanding Stem
DSA < 140'
PSA < 100'
BIR > .96
Weight < 3.0 grams
Base straight
Barb tips straight or squared

Type 6 Eastgate Split Stem
PSA > 80', < 100'
BIR > .90, < .96
Weight < 3.0 grams

Type 7 Surprise Valley Split Stem
DSA < 195'
PSA >100', < 130'
Weight < 3.0 grams
Triangular shaped
Base concave

Type 8 Cottonwood Triangular
Unshouldered
Weight <3.0 grams
Base straight or concave
Basal width-maximum width ratio > .90
Maximum width position < .25

Type 9 Cottonwood Bipointed

Unshouldered
BIR > .98
Weight > 3.0 grams
Basal width-maximum width ratio > .90
Base convex or pointed
BC 1.0

Type 10 Gunther Stemmed

DSA > 145', < 175'
PSA< 100'
BIR < .80
Stem length-barb length ratio < 2.0
Weight > 3.0 grams

Type 11 Alkali Stemmed

DSA > 170'
PSA < 125'
BIR > .70
Stem length-barb length ratio > 2.0
Weight < 3.0 grams

Type 12 Rose Spring Side-Notched

DSA > 195'
PSA > 100'
Weight < 5.0 grams
Basal width-maximum width ratio < .90
BC > 0

Type 13 Elko Corner-Notched

DSA < 195'
PSA < 100', < 130'
BIR > .93
Weight > 2.0 grams
Basal width-maximum width ratio < .90

Type 14 Elko Eared

DSA < 195'
PSA > 100'
BIR < .93
Weight > 3.0 grams

Type 15 Elko Side-Notched

PSA >130'
BIR > .99
Weight > 3.0 grams
Basal width-maximum width ratio > .90
Base convex

Type 16 Northern Side-Notched

PSA > 130'
BIR < .99
Weight > 3.0 grams
Basal width-maximum width ratio > .90
Base concave or straight

Type 17 Black Rock Concave Base

BIR < .97
Weight > 2.0 grams
Notch Opening > .60

Type 18 Humboldt Concave Base A

Unshouldered
BIR < .98
Weight > 2.5 grams
Basal width-maximum width ratio < .90
Base Concave

Class 19

Unshouldered
Weight > 2.5 grams
Maximum width position >.25
Base pointed
Thickness > 6 mm

Class 20

Unshouldered
BIR 1.0
Weight > 2.0 grams
Maximum width position > .25
Base pointed
Thickness > 6 mm

Type 21

Shouldered
Weight > 2.0 grams
Base convex
BC > .02
Length > 3.0 cm
Width >1.0 cm

Type 22 Gold Hill Leaf

BIR 1.0
Maximum width position > .25
BC > .05
Thickness > 4.0 mm
Width > 12 mm
Length > 22 mm
Weight < 3.0 grams

Class 23

Weight < 3.0 grams
Basal width-maximum width ratio > .45
Maximum width position < .35
Base convex
Length > 35 mm
Thickness > 6.0 mm

Class 24

Unshouldered
BIR < .95
Weight > 2.0 grams
Basal width-maximum width ratio > .85
Length > 20 mm
Thickness > 2mm

Type 25 Siskiyou Side-Notched

DSA < 180'
PSA < 180'
BIR > .95
Weight < 2.0 grams
Base straight or slightly concave
Length > 15 mm, < 30 mm
Notch width > 7 mm
Notch width-base width ratio 2.0 to 2.2

Class 26
DSA > 180'
PSA < 160'
BIR > .99
Weight < 3.5 grams
Basal width-maximum width ratio > .80
Length > 25 mm
Base straight or slightly convex

Class 27
DSA > 180'
PSA > 95'
Weight > 2.0 grams
Basal width-maximum width ratio < .75
Base convex
Notch width 10 mm

Class 28
DSA > 160'
PSA > 100'
Weight > 4.0 grams
Maximum width position < .30
Base straight or slightly convex
Notch width > 8mm

Class 29
DSA > 195'
PSA > 100'
Weight < 3.0 grams
Basal width-maximum width ratio > .75
Base convex
Notch width > 9 mm

Type 30 Eden
DSA 180'
PSA 90'
BIR 1.0
Weight 5.0 grams

From Mack (1983:257-260)

APPENDIX D

KNIFE TYPOLOGY

Type 1 Vein Chalcedony
Bifacially flaked on edges only
Triangular in shape
Material: Vein chert, vein quartz or tabular obsidian

Type 2 Stemmed
Biface
Stemmed

Type 3 Bifacial Leaf
Leaf-shaped
Bifacial

Type 4 Unifacial Leaf
Leaf-shaped
Unifacial

Type 5 Triangular Straight
Triangular-shaped
Straight sides
Length > 2.0 cm

Type 6 Triangular Convex
Triangular-shaped
Convex sides
Length > 2.0 cm

Type 7 Ovate
Oval-shaped
Length > 2.0 cm, < 3.0 cm
Bifacial or unifacial

Type 8 Rectangular
Rectangular or trapizoidal-shaped
Bifacial or Unifacial

Type 9 Flake Knives

- Flakes or blades
- Edges only modified
- Bifacial or unifacial
- Length > 3.5 cm

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KLAMATH RIVER CANYON
ETHNOLOGY STUDY

July 1990

by

Dorothea J Theodoratus, Ph.D.
Myreleen M. Ashman, M.A.
Helen McCarthy, Ph.C.
Donna L. Genetti, B.A.

Thomas L. Jackson, Ph.D., Project Manager

Prepared by

Theodoratus Cultural Research, Inc.
Fair Oaks, California

for

BioSystems Analysis, Inc.
Santa Cruz, California

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PREFACE

Theodoratus Cultural Research, Inc. (TCR) has edited the text of the Klamath River Canyon Ethnology Study which was submitted to the Bureau of Land Management (BLM) by BioSystems Analysis, Inc. in September 1989. The final copy has been prepared at TCR by Dorothea J Theodoratus and Mildred B. Kolander, with the cooperation of Mr. Carl Thelander, Principal at BioSystems. We would like to give special thanks to Richard Hanes of the Oregon/Washington State Office of the BLM for his keen editorial eye and helpful suggestions in preparing the final version of this manuscript.

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Appendix A Ethnographic Site Records
Appendix B Maps: Tribal Territories

Under Separate Cover:
U.S.G.S. Quad. Chicken Hills (7 1/2')
U.S.G.S. Quad. Mule Hill (7 1/2')
U.S.G.S. Quad. Secret Spring (7/1/2')

INTRODUCTION

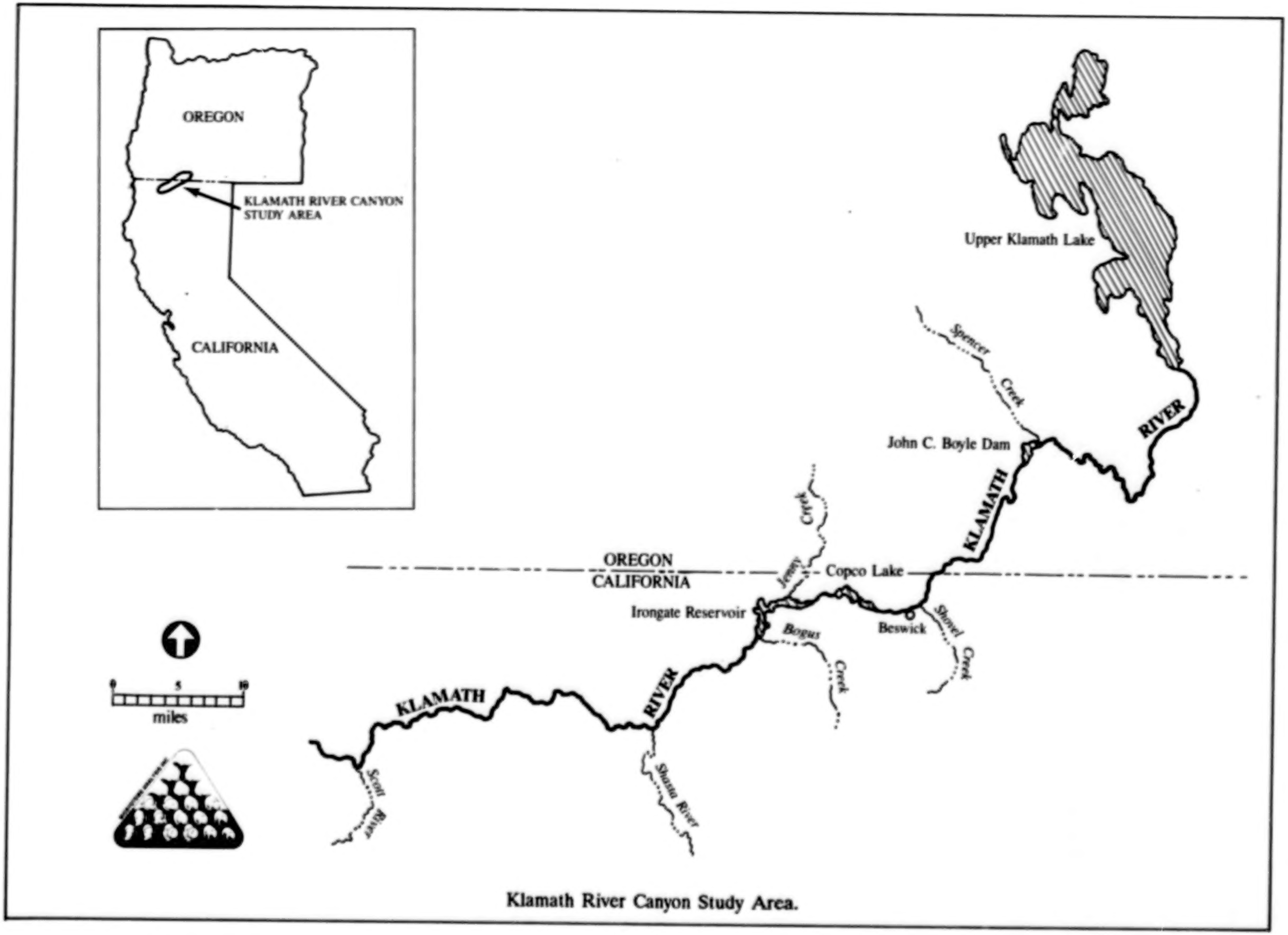
In recognition of Native American concern over public land-use management practices, the Bureau of Land Management, Klamath Falls Resource Area, Lakeview District, contracted in 1989 with BioSystems, Inc., to inventory, describe, and analyze ethnographic sites and regions along a designated stretch of the Klamath River. The research objectives were to collect ethnographic information on the study area, which consists of the Upper Klamath River Canyon from the John C. Boyle Dam in Oregon on the north and downstream to the backwater of the COPCO Reservoir (river mile 204) in California. Upstream the western and eastern boundaries follow the upper rim of the canyon to the Oregon state line, while in California they extend one-fourth mile from the river bank (see map).

The Klamath River is a dominant geographical feature in this region of California and Oregon, and, in the past, its fall and spring runs of anadromous fish provided a major source of sustenance for the inhabitants of the river basin from its mouth on the Pacific Coast to its headwaters well above the study area. Archaeological data from a study area site suggest "the cultural activities of any one or a combination of five 'tribal' groups (Achomawi, Klamath, Modoc, Shasta and Takelma) in the Late Prehistoric times" (Mack 1983:6). The purpose of this investigation, then, is to examine the ethnographic and historical record for information regarding those peoples who used the Klamath River Canyon, the ways in which they exploited the rich resources of the riverine environment, and the sites and locales they frequented. This report presents an evaluation of the ethnographic database; an ethnographic overview including identification of the groups who used the area, along with discussion of the boundaries between them; and a brief consideration of subsistence/settlement systems expressed through their seasonal activities. Finally, a comprehensive list is provided of sites generated by this research.

Native American Spiritual Values

The concept of religion and the associated concept of "sacred" presents problems in meaning when applied cross-culturally, because these are culture-bound categories with particular meaning in western society. In general, religion can be defined "as a system of beliefs and practices toward the 'ultimate concern' of a society" (Lessa and Vogt 1965:1). Religion includes a cosmology--a content which defines the world, the supernatural, man, and the relations between these. Religion thus directs human behavior, and the associated beliefs are acted out in a number of social or private practices or activities. Events of the life cycle, seasonal cycles, or unexpected crises are often marked by ritual behavior. Religion helps to make these events understandable, and offers a means by which the focus behind the events can be controlled (Theodoratus Cultural Research 1984:11).

Rituals can be practiced on an individual level, where a person observes a particular practice as part of her/his daily activities. Small group observances might involve a family gathering with a religious specialist (shaman/"doctor") who, with her/his esoteric knowledge, has special access to supernatural power often used for curing or life-crisis events. Other rituals and ceremonies involve the participation of all of the society's members in events considered to be vital to the



Klamath River Canyon Study Area.

society as a whole (e.g., collection of essential resources such as fish, acorns, epos). These larger rituals renew and emphasize members' needs for, and dependence on, the total society. The rituals must be performed properly according to well established rules. A meaningful ritual involves time, place, verbal proclamations, and symbolic objects. All of these are considered sacred and are treated with respect.

Religion, while having an established order, is not totally static—it responds to changes within a society. Stress or conflict situations often promote reformative religious movements which assist the members to reconstruct their world with new actions for new situations. These "revitalization movements" usually involve a prophet with a new message and new or modified rituals. While some such new religions die out quickly, others adjust to the new situation and help maintain values and "ultimate concerns." Revitalization movements stress unification and solidarity, while seeking to predict social change through belief and ritual. One such example is the Ghost Dance of 1870, which has now become a part of tradition and has been sanctified and maintained the same way as other traditions (Theodoratus Cultural Research 1984:11-14).

The concept of spiritual/supernatural power permeating the environment is a basic element in all Native American religions of the study area. Each individual is influenced by this spiritual life, but the shaman is at the pivotal point with the ability to heal. The people of the study area have strongly developed religious concepts and practice intimate day-to-day contact with features of the environment (e.g., animals, trees, rocks, springs, weather), which are filled with potential power. Myths are expressions of the spirit world that explain, among other things, the relationships between people and the powers—both benign and malevolent—which are infused throughout the environment. Special locations inbued with supernatural qualities are important for use in spirit quests by individuals. Certain plants used by shamans are regarded as possessing supernatural qualities necessary for ritualistic curing.

In general, there were special places within each group's territory believed to be sacred or possessed with supernatural qualities. Topographic features (pools, rock outcroppings, secluded places) often held the qualities for such veneration. Many of these places were (are) used in quests for special powers. Access to such places has continued to be important for the maintenance of Native American traditions.

Cemeteries and burials are culturally sensitive subjects of special concern to Native Americans. Land development projects pose the possibility of disturbance to these sites, resulting in the Native Americans' involvement in the caretaking and protection of these extremely sensitive locales. Archaeological work also constitutes disturbance and thus violation of the sanctity of burial/cremation grounds.

The Ghost Dance movement of the 1870s influenced the indigenous religions of the area and resulted in religious interchange between groups in the study area and those in neighboring areas. Also at this time various pressures on these groups by the non-Indian population resulted in relocation of living quarters—often to locations beyond their traditional tribal boundaries. Consequently, there was frequent intermarriage, resulting in an intermixture of religous traditions and the combined use of territories which previously had been confined or restricted to a certain group. Thus, the various groups have shared cultural traditions as well as concerns regarding issues from the outside society which affected the various communities and their religious practices. These concerns have been expressed by the groups which have traditional ties to the study area.

Cultural Heritage Values

Cultural heritage sites are those locations across the landscape which are invested with spiritual and traditional values by the people residing in the territory. Some of the most typical types include, but are not restricted to:

- Village sites
- Campsites
- Trails
- Resource gathering sites
- Mythological places
- Power spots
- Sweat locales
- Religious events
- Cemetery (burial/cremations)
- Significant historic events
- Refuge sites

The qualities distinguishing this broad range of sites is not always obvious to the outside observer, who may not recognize the cultural meaning which has been invested in them. There are various visual, auditory, spiritual, and other sensory attributes attached to many of the sites. The symbolic meaning of these places is not readily recognized by persons of other cultures because the meaning is imbedded in the cultural heritage of the specific group from which these traditions derived. Consequently, if traditional values are to be perpetuated, communication must be maintained with knowledgeable Native Americans, because cultural heritage values lie within the repository of their expertise.

REVIEW OF THE DATA BASE

Methods

The research staff, consisting of Dorothea J Theodoratus, Myreleen Ashman, and Donna Genetti, met in a pre-work conference held at Klamath Falls June 27, 1989, with Bureau of Land Management staff, James Beltram (Contracting Officer, Medford), Barbara Young (Contracting Officer, Lakeview District), Carla Burnside (Contracting Officer's Representative and BLM archaeologist), and Sharon Gonzales (Administrative Staff). The history and present-day situation of the study area was discussed and information pertaining to the investigation was supplied to the contractors. The contract was clarified at this meeting. It was determined that, because of time and funding constraints, the scope of the Request for Proposals was too broad. The extensive fieldwork aspects of the study had been modified and reduced in pre-work discussions between James Beltram and Clinton Blount of BioSystems (BioSystaems 1989). It was determined that the significant reductions in the fieldwork allocation could result in incomplete coverage of the study area, but that the constraints were overriding. Time might be better spent with heretofore under-investigated archival materials, for example at University of California's Bancroft Library.

The research staff conducted a thorough and comprehensive review of the available ethnographic literature, archival materials, and historic documents pertaining to the study area. Holdings were examined at repositories including: the Klamath County Library, Klamath Falls; Klamath County Historical Society Archives, Klamath Falls; Bureau of Land Management Records, Klamath Falls; California State Library, Sacramento; Shields Library, University of California, Davis; California State University, Sacramento, Library; and The Bancroft Library, University of California, Berkeley. Telephone interviews with Klamath National Forest personnel determined that their holdings in Yreka were replicated at the California State Library (J. Rock, personal communication to D. Theodoratus, Yreka 1989).

The research investigators visited the study area with Carla Burnside, Bureau of Land Management archaeologist. Most of the previously identified sites in the Klamath Canyon were visited. This reconnaissance was valuable in acquainting researchers with the general environment and the nature of the sites found in the study area.

Representatives of the concerned Native American groups were contacted about their interests in the study area. Telephone interviews were conducted with a member of the Shasta Nation who was designated by other members to speak for that group regarding cultural heritage values. It is clear from these conversations that the Shasta people are concerned about their heritage in general, and particularly about sensitive sites within what they consider to be their tribal area. They are prepared to address any potential disturbance of sensitive areas that they consider to be within their jurisdiction. The Shasta consider themselves to be caretakers of burials within their ancestral territory and would prefer these not to be disturbed. Other sensitive types of areas/sites for which they would seek protection are rain rocks, springs, and other spiritual places. They are also interested in gathering rights on public lands. Any information or questions could be addressed to the current tribal chairperson, or Betty or Roy Hall, Shasta Nation, Mugginsville, California. Mrs. Hall expressed strong interest in and concern for the study area, and her comments are integrated into this document. The Shasta medicine woman referred to throughout this report has relocated in the Los Angeles area and at this time is not available for comment.

Repeated efforts were made to reach the Klamath/Modoc tribal chair. Finally, the Cultural Program Director, Mr. Gordon Beetles, was contacted; his comments contributed important information and regarding Klamath/Modoc interests and values in the study area. In the past, the study area has been used primarily by the Modoc, but by certain groups of Klamath as well. Both groups consider it to be important both historically and culturally, and intend to enjoy its benefits as long as possible. People continue to use it today for camping and for spiritual purposes; children are taken into the canyon to learn about their past. Of particular concern is the wildlife, which should be closely protected and guarded. Burial sites, cremation areas, rock cairns and vision quest sites are of considerable concern, and it is the hope of the Klamath/Modoc peoples that these be protected by limited access, a buffer zone and air patrol. It is believed that disturbance of any burial will interupt the soul's voyage to the afterlife. Vision quest sites in the Klamath gorge are also important, especially for young boys at puberty. These sites are most likely to be located "up on top" rather than in the gorge, and usually have pairs of pits--one for heating rocks (ca. four feet in diameter) and one for sweats (ca. six feet in diameter). Depressions at the bottom of the gorge often are medicine pits used by an ailing tribal member who was separated from the group at the onset of illness (six to eight feet in diameter and two feet deep). Rock cairns in the canyon are important trail markers made by travelers, who would add a rock representing a prayer as they passed. The sky, sun, and moon would bear witness to the prayer for "good life" and to the traveler being there.

The Klamath/Modoc people travel great distances for spiritual/religious practice. Many people may be using the area, but do not discuss their use publicly. Others, however, are unsure of their access rights, but would make use (or more use) of the area if they knew of the possibility. To better inform their members, the tribe is interested in acknowledging potential use through a statement in their newsletter. The Klamath/Modoc tribal cultural committee plays a strong role as an advisory body in these matters; however, they are ready to assist agencies and to assess situations of cultural heritage concerns whenever the needs arise (contact Mr. Beetles at the Klamath and Modoc tribal office).

Often, Native Americans find it difficult to express themselves on general, non-specific issues such as this investigation. If a particular project is generated for the area (e.g., Salt Caves Hydroelectric Project) their concerns might be voiced more publicly. Thus, response to this study does not preclude further Native American interest concerning specific locations which might be affected by future developments in the vicinity. Spokespersons of the Shasta and Klamath/Modoc groups are interested and want to be kept informed of any developments in the study area.

Evaluation of Sources

It was determined during the course of research that the study area is not well represented in the documentary record. This is due in part to the relative remoteness of the river gorge and its consequent lack of chroniclers. The early removal and/or demise of the peoples in this region is also a contributing factor. The displacement of the Shasta, coupled with the Klamath, Modoc, and Snake Treaty of 1864, and the pursuant controversy which lead to the 1872–1873 Modoc War, undoubtedly contributed to post-contact, fluctuating territorial divisions. As a result, extrapolation and synthesis of general ethnographic information from neighboring groups became an important aspect of this research. By and large, the several ethnographies of the peoples in the study area present a generalized level of information that does not address the specific issues involved here.

In contrast, C. Hart Merriam proved to be a meticulous researcher of the study area. His materials on file at The Bancroft Library provide specific site information on the California portion of the gorge (Merriam n.d.:G/General/N1; see map, Appendix B). Evidence derived from several other researchers corroborates these data for several sites (e.g., Dixon 1907; Holt 1946; Kroeber 1925; Powers 1976). Silver (1978) presents a valuable summary of Shasta studies in *The Handbook of North American Indians*, and Winthrop (1986) has recently added to the data in his work on survival and adaptation among the Shasta.

The basic ethnography for the Modoc is provided by Ray (1963), based on fieldwork in the mid-1930s; however, while this research supplies detailed and important data, it focuses on the lake settlements to the east of the study area. Similarly, Kroeber's earlier (1925) treatment of Modoc/Klamath is also valuable, but does not contain information specific to the study area.

The body of literature that exists about the Klamath is varied and extensive. The Klamath and the Modoc have been lumped together at times on the basis of their close linguistic affinities and, consequently, have often been discussed as a single unit (Barrett 1910; Dixon 1907; Gatschet 1890). Spier (1930) conducted fieldwork with the Klamath in 1925 and 1926, subsequently producing the definitive work on this group. Again, information is lacking regarding Klamath use of the study area.

Historical accounts also exist for "Klamath River Indians" based on reports of pioneers in the area. Descendants of the Hessig family, whose ranch was on the river just above Shovel Creek, have left valuable accounts of early use of the river. They include some information on Native American activities (A. Hessig n.d., 1965; J. Hessig n.d.; cf. Anderson 1974).

Early investigations conducted in the late nineteenth and early twentieth centuries are of great importance because the consultants' experience and education extended back into pre-contact times and encompassed the vast changes of post-contact societies. Some of these experiences were not shared by consultants who came later. While some patterns of use have changed significantly since the turn of the century, many of these recent consultants have maintained elements of traditional lifeways throughout their lifetimes. Consequently, older data have been relied on heavily in this investigation. It should also be recognized that time-depths of cultural traditions are not easily approached through ethnographic sources because, conceptually, many ethnographers have tended to work in a static and recent ethnographic past.

In addition to these early ethnographic investigations, portions of the study area have had recent cultural resource evaluations as part of environmental inventories and project impact assessments. The University of Oregon worked on eight sites from 1961–1963 (Mack 1983), and the City of Klamath Falls investigated

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the vicinity of the proposed Salt Caves Hydroelectric Project in 1984–1986. The survey and testing program for the Salt Caves project was directed by Gehr for Beak Consultants, Inc., and completed by Jensen (City of Klamath Falls 1985; Jensen and Associates 1987). Both Gehr and Jensen employed Native American monitors on behalf of the Shasta Nation Council. Additionally, Gehr conducted interviews regarding the interpretation of archaeologically known sites within the canyon. Gehr's consultant identified these sites as affiliated with the Shasta, although they are located beyond the traditionally identified territory reported by earlier scholars. While Jensen disagrees with Gehr on the veracity of these data (Jensen and Associates 1987:42–44), Gehr's information has been incorporated in the present study and reported along with other ethnographic materials, some of which lend general support to certain of Gehr's data. However, concerns continue to exist.

One question focuses on Gehr's research methods. It is not clear that he made any attempts to verify information received from his consultant. Standard anthropological inquiry dictates that information be verified from other sources (consultants and/or literature/archives) or, whenever possible, through alternate questioning strategies. It is necessary to be cautious in understanding the background sources of a consultant's knowledge, such as her/his access to published literature. The ethnographer's familiarity with these sources enables her/him to distinguish between this literary knowledge and orally based knowledge. Gehr followed standard procedure by accompanying his consultant to the sites, but it is not clear whether he was discriminating in his evaluation and analysis of the information obtained. Sometimes consultants use terminology from the dominant society (e.g., Adam and Eve) in order to give veracity or value to a site when, indeed, the opposite effect is often achieved. It is up to the ethnographer receiving the information to clarify these instances.

ETHNOGRAPHIC BACKGROUND

Language and Boundaries

The Klamath River Gorge was apparently occupied and/or used by several ethnolinguistic groups: Shasta, Modoc, Klamath, and possibly Takelma. As previously noted in the evaluation of the ethnographic sources for the region, detailed information is not available for a major portion of the river canyon; therefore, precise determination of the territorial boundaries is not possible (see Appendix B for various maps delineating territory). Nevertheless, careful examination of the data collected by a number of previous investigators has allowed qualified findings appropriate to the current issues.

Shastan peoples occupied portions of southern Oregon (Jackson and Klamath counties) and northern California (Siskiyou County), thus including the southern part of the study area. Those Shasta people residing in the study area were the largest of the four Shastan groups. They were speakers of languages of the Shastan Family, which belong to the Hokan linguistic phylum (Silver 1978:211). Linguistically, the Klamath and Modoc are closely related as speakers of Klamath/Modoc, also known as Lutuamian, which belongs to the Penutian phylum. These peoples appear to have occupied the study area north and east of the Shasta. The Takelma, who lived north and west of the Shasta, spoke the Takelma language, an isolate classified within the Penutian phylum.

Shasta

Exact delineation of boundaries between Shastan subdivisions or between the Shasta and their neighbors has been a matter of some conjecture due to a paucity of explicit information. This can be attributed to the native peoples' forced removal from their ancestral lands, and the immense reduction of the Indian population as a result of the Gold Rush and the Rogue River wars in the mid-1800s. These circumstances, along with the concomitant limited access to traditional native villages and resource areas, forced Shastan peoples into alternative modes of survival which did not always allow the passing on of ancestral cultural knowledge. As a result, it remains unclear whether or not the Shasta living from Hornbrook north (including the study area) were affiliated with the Klamath River Shasta division living to their south (Silver 1978:211). It appears, however, that the Shastan subgroups were distinguished by slight linguistic and cultural differences (Holt 1946:301; Kroeber 1925:286; Silver 1978:211), and that the groups in the study area were perhaps part of the larger Oregon Shasta subdivision.

Further, it is not clear precisely how far up the Klamath River the Shasta territory expanded before it met with Klamath, Modoc and/or Takelma boundaries. It is generally agreed, however (as C. Hart Merriam learned in 1907 and 1919 from interviews with Bogus Tom Smith [see photograph], a Shasta residing just out of the study area), that Shasta "territory extends from Shovel Creek westerly to Yreka . . . , north to Ashland . . ." (Merriam n.d.:6/6a-3/E8). Merriam's map locations of Shasta territory and villages along the Klamath reflect this description (Merriam n.d.:map, 1919:map/Shaste villages; Appendix B). An examination of early

Bogus Tom and wife, Isabel John,
Shasta Consultants to C. Hart Merriam.

(Photo by C. Hart Merriam, 1919.
Courtesy of The Bancroft Library,
University of California, Berkeley)

ethnographic maps illustrates that Powell's map is in general agreement with Merriam (Hodge 1907).

Other scholars' boundary descriptions vary. Powers (1976:243) places the easternmost Shasta village along the Klamath at Bogus Creek downstream from Shovel Creek. DuBois (1939:map [see Appendix B]) similarly divides Shasta and Modoc territory at "Bogus" (town?), extending north from "Bogus" and crossing the Klamath at a point between Iron Gate Reservoir and COPCO Lake. Spier (1930:9, map [see Appendix B]), in close agreement with Merriam, diverges from Powers and DuBois, placing the Shasta northeastern boundary on Shovel Creek (in California) and proceeding to the west, running north of the Klamath River into Oregon where the Klamath crosses Jenny Creek (cf. Spier 1927:360). Kroeber, on the other hand, defines this boundary at a "spot a few miles above the mouth of Fall Creek" (1925:285; Appendix B) thus placing Shasta territory to the west of the study area near where Fall Creek flows south into present-day Iron Gate Reservoir. Holt agrees with Kroeber's boundary "near Fall Creek," and she places a Klamath village site (*Tca'chuduk*) on her map (not discussed in her text) on the southeast side of the river, east of Fall Creek, near the mouth of Shovel Creek (see Ethnographic Site No. KRC-20 below in Ethnographic Sites and Appendix; see also Appendix B). This corroborates Merriam's easternmost Klamath River village site of *Chah'-hah-took* located on the northwest side of the river opposite the mouth of Shovel Creek (Merriam n.d.:G/General/N1, p. 10; see also Ethnographic Site No. KRC-22).

Dixon (1907:386; Appendix B) places this "vague" line to include the headwaters of Jenny Creek, while Heizer and Hester (1970:120-130), using village location data from Dixon (1907), Holt (1946), Kroeber (1925), and Merriam (n.d.:G/General/N1), place Shasta villages in the study area up river to the vicinity of the mouth of Shovel Creek. Berreman (1937:26; Appendix B), also finds the northern Shasta boundary uncertain, and places only the Jenny Creek drainage within Shasta territory. On his maps, however, he places the Shasta boundary at the Klamath River, close to the Oregon/California boundary.

Heizer and Hester conclude that, although there is some slight variation in detail, all boundaries fall within an eight-mile area, and that the upstream Klamath River Shasta village of *Tca'chuduk* is located near Beswick on the south side of the river and on the east side of Shovel Creek (Heizer and Hester 1970:125, 135-36, map). This includes the southern portion of the study area, approximately three miles in length along the Klamath River, from the vicinity of Beswick to the COPCO reservoir. It does not include, however, two sites listed by Curtis (1924:232; see ethnographic site nos. KRC-18 and -19) upriver from Shovel Creek and reaching almost to the Oregon border.

It is concluded here that Shasta territory extended on the Klamath to the vicinity of Shovel Creek. At this point their territory met with that of the Klamath/Modoc, and possibly the Takelma.

Modoc

Definition of Modoc boundaries present a similar problem. Neither Spier (1930:map), Ray (1963:206) nor Kroeber (1925:318) locates the Modoc within the study area, defining their northwestern boundary east of Shovel Creek and south of the Klamath River (see Appendix B). However, Dixon (1907:map [see Appendix B]), and Merriam (n.d.:80/18c, No. 7) place the Modoc on the river within the study area. Dixon locates the Modoc on the Klamath in the vicinity of Iron Gate Reservoir, claiming for them all of the Klamath River eastward from this point (Dixon 1907:map [see Appendix B]). Merriam is less generous, according the Modoc no territory farther west than Shovel Creek, where they met with the Shasta.

Merriam, Dixon, and Kroeber did not identify Modoc sites within the study area. However, at least two historical accounts (Anderson 1974:33; A. Hessig 1965:63) specifically identified Modoc occupation and use of the Klamath River and Shovel Creek at Klamath Hot Springs (Ethnographic Site No. KRC-21). (Anderson's account may be based on Hessig's.) According to Hessig, a member of a pioneer family in the area, there was an Indian trail between Butte Valley and Shovel Creek, "and Indians used to come in droves over this trail to camp on the river and creek banks . . . " (A. Hessig 1965:63). Hessig identifies these Indians as Modoc, notes Indian use of the hot springs, and describes an Indian burial ground on the northeast side of Shovel Creek (A. Hessig 1965:63).

On the other hand, Spier locates the Modoc southeast of the study area, with their northwestern extension just east of Shovel Creek. Their boundary then continues in a northeasterly direction toward Olene. Hence, Spier does not place the Modoc on the Klamath River (Spier 1930:map).

Ray (1963:206) is basically in agreement with Spier, defining the eastern boundary as running north from Mt. Shasta and to the east of the Little Shasta River, then flanking the eastern side of Shovel Creek and continuing north roughly parallel to but south of the Klamath River. Kroeber does not specify the Modoc boundary in this region, but simply states that the Shasta are "below on the river proper" (1925:318). Merriam places the western boundary of the Modoc at the Klamath River on the eastern side of Shovel Creek. According to Merriam, the Modoc extend " . . . along Shovel Creek to the Oregon line . . . " (Merriam and Talbot 1974:14).

Klamath

The Klamath people are known to have occupied the area generally north and east of the study area, although little is known about their use of the Klamath River Canyon. Spier clearly attributes the Klamath gorge south to Shovel Creek to the Klamath:

> The southern boundary of Klamath territory skirts the Klamath valley from this place as far downstream as Spencer creek, near the California-Oregon line, below the canyon of the Klamath. Below this on the river are the Shasta, whose northernmost outposts are on Shovel creek and north of the river on Jennie creek. The Klamath have no settlements on the river, but fish, hunt, and gather roots at such points as Keno, Spencer creek (*ma'lbuk'is*), and at *laik'elmi*, five or six miles upstream from Dorris (?) [Spier 1930:9].

Dixon (1907), Kroeber (1925), Silver (1978), and others place the Klamath somewhat farther north (Appendix B).

Gehr (1986:14) has conjectured the location of a Shasta/Klamath site to be "a jointly occupied fishing site somewhat upstream but below the Klamath Canyon," identified by Spier as *Laik'elmi* Spier 1930:9, 41). Spier's information was obtained from knowledgeable Klamath consultants during his 1925–1926 fieldwork. At this time he found Klamath consultants to be well informed of their culture. Joint occupation of a locality might not be surprising, considering Spier's statement that Klamath/Shasta relations were not always "unfriendly" (Spier 1930:41). Gehr proposes that the City of Klamath Falls site numbers 5, 6, and 16 (here ethnographic site nos. KRC–5, –7, and –8) could be observed as a cluster of continuous sites which might be *Laik'elmi*, the jointly occupied fishing station described by Spier (1930:9, 41). In one of the justifications that Gehr (1986:15) uses for his hypothesis he points out that these sites are on the west bank of the river, which is easily accessible to the Klamath by the overland route from Upper Klamath Lake past Spencer Creek. Actually, both groups had ready access to the area—probably both sides. Mack also discusses the location of the joint Klamath/Shasta fishing camp and places it within the Salt Cave locality (Mack 1983).

Takelma

Takelma occupation of the Klamath River in the study area is open to question. The only direct ethnographic account of the Takelma is found as an appendix to Drucker's monograph on the Tolowa (Drucker 1937:294–296). Sapir comments on Takelma territory in a footnote:

> Dr. Dixon informs me that he found that the Shasta claimed the country east of Table Rock and about Jacksonville, and that he was given Shasta place names belonging to this region. It is possible then that the Upland Takelma did not really border directly on the Klamath, the Shasta intervening; or the country may have been to some extent a debatable territory between the Upper Takelma and the Shasta [Sapir 1907:255 fn.].

Sapir further notes that "The easternmost village of the Takelma beyond Table Rock was . . . *Lat'gau* or *Latgauk*, 'upper country' . . ." (1907:253). He refers to these people as the *Lat'gawa*, ". . . those living in the uplands," and says that they "were also loosely referred to as *Wulx*, i.e., 'enemies,' a name specifically applied to the Shasta, with whom the Takelma were often in hostile relations" (Sapir 1907:254). He continues with his description by saying, "The Upland Takelma were much more warlike than their western neighbors, and were accustomed to make raids . . . in order to procure supplies of food and other valuables" (Sapir 1907:254).

Spier (1927:362–365) does not locate the Takelma in the study area and states that Gatschet "was ignorant in fact of 'their existence'." Berreman, on the other hand, places the Takelma in the upper portion of the study area (Berreman 1937:map [see Appendix B]). Mack (1983:1) uses Berreman's Takelma boundaries to strengthen her hypothesis that the Upland Takelma may have held a portion of the river gorge.

Betty Hall of the Shasta Nation believes Takelma to be the name of a Shasta village or band. According to Ms. Hall, the Takelma should neither be regarded as separate from the Shasta nor extinct. She bases these statements on genealogical research on behalf of the Shasta Nation (personal communication with D. Theodoratus, 7/29/1989).

In sum, the Shasta held the Klamath River within the study area up to Shovel Creek. Further upstream, the gorge was Klamath and/or Modoc territory. Since these latter two groups were loosely affiliated, they may have shared access. Takelma presence in the upper reaches is only tentative, and it is unlikely that they enjoyed a long or secure occupation in that region. At the present time these groups do not occupy the study area, although individual descendants may have resided in the area in recent years. It is known that some Shasta have continued to use the area for spiritual purposes into the 1980s (TCR Field Data 1984).

Subsistence/Settlement Systems

The Shasta were basically a river-oriented people whose settlements clustered mostly along the streams in three major areas, the Klamath River and the valleys of the Scott and Shasta rivers (Kroeber 1925:285–286; Silver 1978:211). A favored geographical setting for a Shasta village was at the mouth of a small creek, at its confluence with the main Klamath River, where a small flat or delta had formed. Villages were usually small, consisting of two or three families (Dixon 1907:421; Silver 1978:212).

In these villages the substantial, permanent winter home, *umma*, was rectangular in plan, about 16 by 20 feet, and excavated to approximately three feet. The earthen walls were lined with slabs of cedar bark, and the plank roof formed a single crest supported by a double ridge-pole. The fire pit was located in the center (Holt 1946:305–306; Kroeber 1925:289; Silver 1978:214). The houses in such villages tended to be built in a row, facing the water (Holt 1946:306). A settlement of several families usually had a small sweat lodge constructed of a framework of arched willow sticks (Holt 1946:307; Merriam n.d.:G/6a–e/E8).

A large village also contained an assembly house which was used as a community gathering house and sweathouse, and as a men's sleeping place in the winter (Kroeber 1925:290; Silver 1978:214). While Kroeber (1925:290) describes assembly houses as rectangular, Merriam's description from a consultant residing near the study area depicts them as circular, with "a large center post with four posts around the circumference. The top was covered with brush and earth" (Merriam n.d.:G/6a–e/E8). The circular form may have been introduced to this area with the Ghost Dance, which is known to have been practiced by the Shasta. For instance, Bogus Tom Smith, who lived near the study area, was an important messenger of this movement (DuBois 1939:12–17). A Shasta elder recalled attending dances in the area with her grandmother in the late 1890s and early 1900s. She did not remember any special structures associated with these events, which were held outside around a large fire (Theodoratus Cultural Research 1984:58). One of the sites located on the river has been identified by Gehr's Shasta consultant as a Ghost Dance site (see discussion of Ethnographic Site No. KRC–15).

In the spring, people moved to brush shelters built in the shade near the river where it was cool. Several families lived together here, sharing a single, central fire (Holt 1946:307; Kroeber 1925:290; Silver 1978:214). In the fall, when the people went to the mountains to gather acorns, they lived in single-family conical bark houses (Holt 1946:308; Silver 1978:214).

The traditional subsistence base was diverse, including numerous vegetal resources as well as wild game. However, the bi-annual salmon runs were the major economic focus, and fishing made an essential contribution to the Shasta diet. Salmon were taken by a variety of methods such as the net, basket-trap, weir, hook-and-line, and spear (Silver 1978:216). The type of net most often used was:

> a long, flowing bag attached to the base of a triangle of poles the upper end of which is held by the fisherman who sits on the scaffolding projecting over an eddy in the stream [Kroeber 1925:294].

Because these fishing platforms were washed away by the winter floods, they were rebuilt each year in April, with the first yearly use blessed with prayer and pounded epos ("yampah," "squawroot," "wild parsley"; *Perideridia* sp.). Each platform location was named (Holt 1946:309–10). Only two weirs are reported for the Shasta, each built in the shallow gravels at a tributary confluence with the Klamath—one at the mouth of the Scott River and the other at the Shasta River (Holt 1946:309).

The "summer" salmon run began about April, while the "winter" run occurred in late fall. Another anadromous fish, the steelhead, made a late summer run in August (Holt 1946:310). The Shasta:

> . . . thought that the first fish to ascend the stream annually brought the 'salmon medicine' put on by the Indians [Yurok] at the mouth of the river. This first fish must therefore be allowed to pass unmolested. As soon as it had passed, fish might be caught; but the first one taken from the water had to be split and hung up immediately to dry, and no salmon might be eaten till this salmon was completely dried and a portion eaten by all who were fishing at that point [Dixon 1907:430–431].

In another ritual, pools were formed by piling rocks around cleared spaces where the fish could rest in quiet waters during their run up the rapids. At these spots, each of which was named, the owner sprinkled tobacco and herbs in the water and prayed, talking about how many fish he hoped for. Later, the owner fished for salmon at night in these pools, and a feast was held for neighbors and relatives on the last day set for this activity (Holt 1946:310). This ritual may be similar in kind to the "salmon calling" activities identified by Gehr's Shasta consultant at Ethnographic Site No. KRC–16 (see site list).

Salmon meat was roasted when eaten fresh, or smoked for storage. It was kept as dried slabs or as salmon flour, which was produced by pulverizing the dried flesh and bones and later used for winter soup (Holt 1946:309; Kroeber 1925:295; Silver 1978:217). In addition to fish the river yielded mussels, which women and children dove for in spring or gathered in low water during the fall. These shellfish were steamed in an oven of hot rocks covered by greens and then opened to dry in the sun (Holt 1946:308).

Many vegetal resources were available in the Klamath River gorge, although the major acorn crop was gathered in the mountains. Various bulbs, tubers, berries, and seeds were collected on the hillsides. Deer hunting also took place mainly in the mountains. While some of these important resources, particularly acorns and deer, were predominantly located in the mountains, it is clear that the Klamath River was the focal point, which played the dominant role in the life of the Shasta.

It is less certain what part the Klamath River played in the Modoc and Klamath peoples' settlement/subsistence systems. The permanent, winter Modoc villages were focused along the shores of Clear, Tule, and Lower Klamath lakes and along Lost River. The people dismantled their winter homes when the snow melted, about March, and began their seasonal collection of resources. The first move was to semi-permanent camps to fish for suckers, a critical component of their diet, and then to the epos digging grounds to procure this root crop which "played the largest role in Modoc economy" (Ray 1963:180–181). Other moves were made to appropriate locations as the season advanced and additional crops became available. The men hunted deer, antelope, and mountain sheep or fished in local streams for trout while the women gathered the plant resources. The most intensive hunting activities took place in the high elevations late in the fall, after which the people returned to the winter villages (Ray 1963:182).

Ray describes a full, detailed schedule of gathering and hunting activities for the Modoc, but does not include any mention of use of the Klamath River nor an economic interest in the resources, especially the salmon, available there. The Modoc are reported to have traveled to the Klamath for particular occasions (such as use of the hot springs, [A. Hessig 1965, supra]). For instance, her account includes a brief discussion of Modoc mourning rituals and burial practices in the study area.

> Many of the Indian women would put pitch on their hair. I've read that they do this when in mourning for their dead. There is a large Indian burial ground on the northeast side of Shovel Creek . . . in the lava rock. Mr. Stockslager told me that the Modocs burned their dead. They would dig a large hole in the lava rocks, gather wood and place the body on it, then burn it with personal belongings. They would roll lava rocks over the ashes. This I believe as I have been there so many times and all the rocks show evidence of fire [A. Hessig 1965:63].

Additionally, she identifies a large cave "directly across the river from the Hot Springs . . . " which she was told was used by Captain Jack and his followers, as well as one other group of "renegade Indians" (A. Hessig 1965:63).

In sum, the river was not reported as a major focus of the Modoc settlement/subsistence system nor as a dominant factor in their lifeways, as it was for the Shasta. Nevertheless, it is clear that since the Modoc buried their dead in this area, it has important spiritual meaning for them.

According to Spier's field data collected in 1925–1926, Klamath settlement focused on the Klamath Lakes, Klamath marsh and the stream which connects them—Williamson River—where the permanent winter villages were established (Spier 1930:8). None of these settlements were located on the Klamath River (Spier 1930:9). Traditionally, the Klamath seasonal collecting schedule was similar to that of the Modoc, with the people leaving the winter villages in spring to move through a series of encampments in order to procure their strategic supplies: fish, wokas (water-lily seed), and game—in that order of importance (Coville 1904; Spier 1930:10–11, 145). The Klamath River gorge was incorporated into this cycle for fishing, hunting, and gathering roots. Locations identified include Keno, Spencer Creek, and *Laik'elmi* (Spier 1930:9).

Unfortunately, more specific information is not available on the use of the river nor the importance of its resources for the Klamath people. It may be inferred, however, from the existence of a "first sucker ritual" that the suckers available in Williamson River and other nearby streams were more important to the economy than salmon taken from the Klamath (Spier 1930:148). While the Klamath people appear to have used the Klamath River to a greater degree than did the Modoc, it was not a major focus of their subsistence system, as it was for the Shasta.

Trade

The river was an important trade route particularly for goods (acorn and dentalia) which moved between the Shasta and the Rogue River Indians (Kroeber 1925:287). Howe describes the Canyon of the Klamath as having provided a "rough but passable trade route through the Cascade Mountains." He illustrates this with a photograph of the river, and states, "This pass near the California–Oregon border enabled the Modocs of the Lower Klamath region to carry on commerce with coastal tribes" (Howe 1968:198). Trade items traveled in both directions, and the Shasta also exchanged food and other commodities when they visited one another's villages (Silver 1978:213).

The Klamath and the Modoc were noted as great traders, often traveling to The Dalles to trade slaves obtained in battles with other groups. Spier (1930:40) describes the slaves as being from the Pit River (Achomawi and Atsugewi), from the Northern Paiute and the Shasta, with a few Upland Takelma from the Rogue River drainage. Gatschet also mentions the sale of slaves "on the Columbia River for Cayuse ponies" (1890:ix).

> Slaves, Pit River bows, and beads are taken there to trade for horses, blankets, buffalo skins, parfleches, beads (probably dentalium shells), dried salmon, and lampreys. Two slave children are valued at five horses, several buffalo skins, and some beads. This is not far from the values recorded by Taylor in 1859; one woman was worth five or six horses, a boy one horse [Spier 1930:41, based on Gatschet 1890:ix].

The salt found in the study area (Ethnographic Site No. KRC–13) is not mentioned by Holt, who does identify two major salt sources for the Shasta located out of the study area. This critical resource was procured for their own use as well as for trade (Holt 1946:309; Silver 1978:213). There is no documentation for contemporary use of traditional salt sources.

Despite the active trade through the region, intertribal relations between the Shasta and the Modoc were primarily hostile. The Modoc conducted annual summer raids and the Shasta retaliated (Silver 1978:213). An account of one such Modoc raid on the "Klamath River Indians" at the mouth of Shovel Creek in the study area tells of a village being "completely wiped out" except for the women who were blinded and taken as slaves (J. Hessig n.d.:85).

ETHNOGRAPHIC SITES

The following list of 26 ethnographic sites for the Klamath River Canyon (KRC) is derived from several sources which contain specific information on the study area. Data from eight sources are based on original fieldwork by early investigators, and represent knowledge retained by the local Native American community in the early part of this century. In some cases these consultants' memories stretched back into precontact times. The chroniclers of these memories include Curtis, Dixon, Holt, Kroeber, Merriam, and Spier. Two historical accounts on the study area were authored by A. Hessig and J. Hessig. Comparisons of these data substantiate site location when recorded by multiple sources. Most of these researchers identify one or more specific sites by name, and a few sites are located on maps. Of these investigators, Merriam's work is important in terms of site locations and specific information because both his notes and maps are carefully detailed. This study relies on his identification of sites in the California portion of the study area, since his information is more complete than other ethnographers for this region. Heizer and Hester's publication (1970) is a compilation of previous work particularly relying on Merriam's data. There appears to be some misinterpretation of the data due in part to problems with orthography, e.g., confusing of *Ah-soo-rah* with *Ah-soor'-a-how'-wah* (see Ethnographic Site No. KRC-21).

Sixteen of the sites were identified by Gehr's (City of Klamath Falls 1985) work for the City of Klamath Falls. These sites were first identified archaeologically through survey methods. Subsequently, Gehr visited the sites with two Shasta consultants, one of whom gave her interpretations of their cultural meanings. Apparently, these consultants did not identify other sites within the study area independently of the archaeologically defined sites. This is a clear expression of Shastan cultural values and concerns for the preservation of their traditions in the area. No Klamath/Modoc people were involved in this portion of the research, although some of the study area was apparently Klamath/Modoc territory.

Gehr's main Shasta consultant interpreted 13 of the 16 archaeological sites, which were identified as having present-day cultural significance (see Appendix:Site Records). In addition to describing possible uses of these sites, she separated the canyon into two parts. One, which she called "Bear's Land," lies upstream from the site of a landslide which dammed the Klamath River approximately 7,000 years B.P. The downstream part she referred to as "Coyote's land," located about one-half mile downstream from Ethnographic Site No. KRC-9 (Frain South Field). The consultant's notion about this arbitrary division has neither been substantiated by this thorough investigation of the literature nor have her interpretations of site-use been verified through standard ethnographic methodology.

Ethnographic sites nos. KRC-5, -7, and -8 comprise a complex of sites that both Gehr and Mack identify possibly as *Laik'elmi*, mentioned by Spier (1930:9, 41). Mack and Jensen identify Ethnographic Site No. KRC-16 (Border Village) as being possibly Takelma (Jensen and Associates 1987:42; Mack 1983:1). One potential site (Ethnographic Site No. KRC-17, not verified by scientific study) was pointed out by the BLM archaeologist (Theodoratus Field Data 1989). Two sites, ethnographic site nos. KRC-18 and -19, were identified by Curtis, but were mapped in the general vicinity because the exact locations were unknown. Ethnographic site nos. KRC-19 and –20 may also be Merriam's *Ah–soor'–a–how'–wah* (Ethnographic Site No. KRC–21). In addition, Merriam has identified five other sites which fall within the study area. Holt identifies one site *Tca'chuduk* (Ethnographic Site No. KRC–20).

Sites

The following ethnographic sites are listed beginning with the northernmost site, closest to John C. Boyle Dam and continuing southward to river mile 204, the southern boundary of the study area. All sites are considered to be Shastan unless otherwise noted. See Appendix A, Site Reports and map locations, for documentation and details.

KRC– [Klamath River Canyon Ethnographic Site Number]

1 **The Beginning; Garden of Eden** (City of Klamath Falls, No. 26)

According to Gehr (City of Klamath Falls 1985:site report), this medicine area "is the only site of its kind in the canyon." On the east side of the river, this site consists of "a cluster of three circles five meters in diameter, cleared from a natural pavement of cobbles, . . . similar in size to those of deep housepits elsewhere in the canyon." Two rock cairns have been identified by a Shasta consultant as "grave markers for the first Shasta, equivalent of the Shasta Adam and Eve." She states, "As the Garden of Eden, the first medicine power and the first practitioners of the use of that power were brought forth and taught here. There are niches in the basalt cliff east and above the terrace where offerings were received." Other Shasta refer to this site as "The Beginning" (Theodoratus Field Data 1989).

2 **Feather Flats** (City of Klamath Falls, No. 20)

According to a Shasta consultant, this is a medicine area to protect Ethnographic Site No. KRC–3 (City of Klamath Falls, No. 24). The site, on the east side of the river, consists of one housepit, "deep under ponderosa pine and oak leaf duff. This is the largest undisturbed pit in the canyon, from Big Bend to the Oregon border" (City of Klamath Falls 1985:site report).

3 **Women's Ceremonial Area** (City of Klamath Falls, No. 24)

Gehr's Shasta consultant described this as a site for women's ceremonial use, including childbirth, initiation and puberty rites. The site has eight housepits along a spring creek flowing northwest to the Klamath River (City of Klamath Falls 1985:site report). This site is located on the east side of the river.

4 **North Field Mounds** (City of Klamath Falls, No. 23)

This site, on the east side of the river, contains 27 mounds (two to three meters long by 1 to 1.5 meters wide) of river cobbles. A Shasta consultant said these are "Shasta burials, one of which was of a Shasta medicine woman whose focal area was the ridge at Big Bend, the eastern most part of the Shasta world." According to Gehr, "she identified another mound as the burial of a young girl named Juana Helia. According to Gehr, the mounds are similar to those at Beswick, California, a documented [*sic*] prehistoric Shasta burial area in use through the nineteenth century (City of Klamath Falls 1985:site report).

5 **Camp Two** (City of Klamath Falls, No. 16)

This Klamath/Shasta site is one of three that Gehr proposes to form the complex of *Laik'elmi* mentioned by Spier (Gehr 1986:14; Spier 1930:9, 41). The site is located on the west side of the river. See also ethnographic site nos. KRC–7 and –8 (City of Klamath Falls:site report).

Gehr, combining site nos. KRC–5, –7, and –8, states that archaeological research done in 1961 "showed this site to hold Klamath Indian artifacts and cremations" (Gehr 1988:4).

6 **Big Boulder Village** (Mack 1983)
Baby Rock Village (35–Kl–18), (City of Klamath Falls, No. 3)

This site, on the east side of the river, consists of 41 housepits aligned in rows parallel to the riverbank. "A boulder with cupules on vertical and horizontal surfaces . . . lies between housepits excavated in 1961 by the University of Oregon." Three of the cupules (near the rock's peak) appear to be large enough to have been mortars. This type of boulder, often referred to as "baby" or "rain" rocks, is, according to Gehr's Shasta consultant, "a record which signifies the ascendance of shamans or doctors to their position in the area, following the death of the preceding doctor. The rocks are called baby or rain rocks since Indian doctors were called upon to bring rain or pregnancy, or to ensure the replacement of fish and other foods in the environment" (City of Klamath Falls 1985:site report).

Gehr states that "adjacent to this village is a Shasta cemetery marked with stone cairns." He comments that "they are similar to those that journalist Stephen Powers described in 1877 for other Shasta burial sites he observed west of the canyon" (Gehr 1988:4).

7 **Klamath Shoals Village** (35–Kl–20) (City of Klamath Falls, No. 5)

This Klamath/Shasta site, located on the west side of the river, is one of three that Gehr proposes to form the complex of *Laik'elmi* mentioned by Spier (Gehr 1986:14; Spier 1930:9, 41). This area is currently used as a campsite. See also ethnographic site nos. KRC–5 and –8 (City of Klamath Falls: site report).

Gehr, combining sites KRC–5, –7, and –8, states that archaeological research done in 1961 "showed this site to hold Klamath Indian artifacts and cremations" (Gehr 1988:4).

8 **Klamath Shoals Midden** (Mack 1983) (35–Kl–21) (City of Klamath Falls, No. 6)

This Klamath/Shasta site, located on the west side of the river, is one of three that Gehr proposes to form the complex of *Laik'elmi* mentioned by Spier (Gehr 1986:14; Spier 1930:9, 41). Materials, including human bones and stone tools, were found to be weathering out of the slope in 1961 (Mack 1983). See also ethnographic site nos. KRC–5 and –7 (City of Klamath Falls:site report).

Gehr, combining sites 5, 7, and 8, states that archaeological research done in 1961 "showed this site to hold Klamath Indian artifacts and cremations" (Gehr 1988:4).

9 **Frain South Field** (35-Kl-19) (City of Klamath Falls, No. 4)

A Shasta consultant identified one portable rock (not located) with a deeply carved glyph as the altar for the initiatory entrance of babies to the Shasta local tribal unit. The site, located on the east side of the river, is a lithic scatter which probably was repeatedly plowed when it was farmed by the Bryant, Spencer, and Frain families. The Shasta consultant believes there is a possibility that burials may be located at this site. Extensive damage to the site is probably from farm activities (City of Klamath Falls 1985:site report).

10 **Crayfish Creek Portal** (35-Kl-23) (City of Klamath Falls, No. 8)

This site, located on the east side of the river, consists of four housepits. A Shasta consultant described the site as "one which provided the necessary ritual entry and exit for visitors and local dwellers to the complex of sites on the lower terraces (see ethnographic site nos. KRC-4, -6, and -9) (City of Klamath Falls 1985:site report). Crayfish Creek is said to be "fed by a warm spring and springs are part of such ritual activity among the Shasta and other Native American groups," according to a Shasta consultant (City of Klamath Falls 1985:site report).

11 **Butler's Lookout** (City of Klamath Falls, No. 13)

This site, located on the north side of the river, consists of an isolated pit on the southwest corner of the site. The site is located on a point "with an excellent view of the canyon below, and of the 'Mountain Keeper,' a basalt structure (natural) on the northern rim of Secret Spring Mountain, 5.5 meters to the south, with whom the shaman maintains a spiritual connection and asks permission for safe passage." According to Gehr's Shasta consultant, "Isolated pits in the Shasta world are for the Indian doctor, the shaman, or for hunting, except when associated with a village, when they are for social isolation. The consultant also stated, that there is "a basalt dike 20 meters downslope to the east of the pit which is associated with the sacred nature of the area and is used as a meditation site." At the northwest edge of the dike is a basalt rock that has been described by a Shasta consultant as a meditation rock (City of Klamath Falls 1985:site report).

12 **Salt Cave Lookout** (City of Klamath Falls, No. 15)

This isolated housepit located on the north side of the river may have been a hunting lookout according to Gehr's consultant. "It affords a clear and unobstructed view of the Salt Caves and the canyon up and down stream" (City of Klamath Falls 1985:site report).

13 **Salt Caves** (35-Kl-24) (City of Klamath Falls, No. 9)

This site, located on the south side of the river, includes a cave "with salt deposits on rear wall and floor. Other smaller niches are in the rock cliff face adjacent to the major shelter. The [cave] is within ten meters of the river." Above the rock face (140 meters) is a secluded flat area which, according to a Shasta consultant, was used as a dancing ground and for celebrations and weddings among the Shasta (City of Klamath 1985:site report).

14 **Men's Hunting Sweat Lodge** (35–Kl–26) (City of Klamath Falls, No. 11)

This site, on the north side of the river, contains eight housepits, and overlooks Site No. KRC–16 (35–Kl–16) located on a flat near Chert Creek. A Shasta consultants's on–site observations were "that it was an area where ritual functions were performed for the males of the local Shasta group, some of which were concerned with hunting, and that the creek probably had been dammed near the present location of an irrigation ditch take–out point so that the sweatlodge associated with the rituals could be used. The site was seen as complementary in function to the women's sweat and ceremonial site [Site No. KRC–3]" (City of Klamath 1985:site report).

15 **Coyote's Paw** (City of Klamath Falls, No. 28)

The site, on the south side of the river, consists of housepits, low stone alignments, and girdled trees. Gehr's Shasta consultant said this was a 1870 Ghost Dance site, and probably also was used for later ceremonials. She found this site to be "one of the most nearly complete sites in the whole of the Shasta use area, and . . . a model by which other sites could be better understood. Within the site are domestic housepits, social isolation areas, doctoring stations, and dancing grounds for the Ghost Dance." She further described this site as a "principal ceremonial area of the cultural geographic unit known as Coyote's land. Further to the west is Eagle's land, and to the east and upstream is Bear's land, each of which hold significance to the Shasta. The Ghost Dance was conducted at the site using specially marked girdled Ponderosa Pines as center poles for each of the dances. The site may have been in use for Bole Maru services which evolved from the original Ghost Dance; these ceremonials incorporated center poles in dance houses, or trees on dance grounds functioning in the same way to channel energy between earth and heaven, to accept prayers, and to tranform the people." Three of the four girdled trees remain standing. According to the consultant, "associated with this site was a rain rock, a shaman's marker, stolen in the early 1970's." The site overlooks Ethnographic Site No. KRC–16 (35–Kl–16) and is across the river and directly south of Site No. KRC–14 (35–Kl–26) at the same elevation (City of Klamath Falls 1985:site report).

16 **Border Village** (Mack 1983) (35–Kl–16) (City of Klamath Falls, No. 1)

Possibly Takelma (Jensen and Associates 1987:42), this site, located along the north side of the river, has 23 housepits. Gehr's Shasta consultant offered the following explanation for this site. A cluster of three housepits at the western end of the site "were used by salmon–callers to invite fish upstream." Separated from this cluster by 18 housepits "is a cluster of two pits used by salmon callers [*sic*] to send the uncaught fish upstream to spawn." Mack (1983) notes that portions of the site had been excavated by the University of Oregon in 1961 (Mack 1983). Gehr's 1984 survey (City of Klamath Falls 1985:site report) added the location of the "salmon calling pits" to the site description. Gehr also states that "the site overlooks the location of an aboriginal Shasta fish weir currently the base for a wing dam supplying irrigation water to a ranch downstream in California."

17 Burial Grounds

This site, located on the east side of the river on a long flat bench, consists of several rock piles arranged in rows. These appear to be similar to those identified as "Shasta burials" at Ethnographic Site No. KRC–4 (Theodoratus 1989:field notes).

18 *Wiyahavir*

Identified by Curtis as a Shasta settlement "on Klamath river near the California–Oregon boundary" (Curtis 1924:232, #24). Mapped as to general vicinity.

19 *Chuswi*

According to Curtis located above his *Asurahava* on the Klamath River (Curtis 1924:232, #23). Mapped as to general vicinity.

20 *Tca'chuduk* or *Ce–cutuk*

Holt places *Tca'chuduk* on the southeast side of the Klamath River just northeast of the Shovel Creek mouth (Holt 1946:map). Silver identifies the site at this locality as *Ce–cutuk* (Silver 1978:211). Heizer and Hester (1970:125) list Holt's identification. Gehr (1986:1) uses Silver's identification; later he uses the spelling *Chechutuk'* (Gehr 1988:6). Gehr reports a "traditional Shasta meeting" with Salt Caves Hydroelectric Project proponents, BLM planners, and his research staff at this site October 19, 1984, "as a condition of Shasta cooperation." He refers to this meeting as a "vision quest," the purpose being to "ask Old Man Who Walks With Coyote and other spirits protecting the canyon to examine all of us." The spirits were to assist the Shasta Medicine Woman/Consultant in determining her contributions about canyon sites (Gehr 1988:2).

21 *Ah–soor'–a–how'–wah*; possibly *Wah–soor'–a'–hah'–wah*

Merriam, who uses two spellings for this site, identifies it as ". . . Shaste village at Klamath Hot Springs at the mouth of Shovel Creek in Klamath Canyon—the easternmost village of the tribe. The inhabitants [are] called *A–soor'–ah'wah'cho'–ish*, or *Ah–soo'–rah–how'–wah–choo'–ish*. The old village *Ah–soo'–ra–how'–wah* was on the south side of Klamath River, on the flat on west side of Shovel Creek (site of present Beswick Hotel) at Klamath Hot springs, in a grove of large northern cottonwood (*Populus trichocarpa*). Named from Shovel Creek, which bears the same name" (Merriam n.d.:G/General/N1, p. 6).

Curtis calls this site *Asurahava* and describes it as "on the Klamath river . . . ; a permanent village with a very large population during the summer fishing" (Curtis 1924:232, #22).

[NOTE: Heizer and Hester confuse this site with *Asurahawa*, which they place on their map (#80) as being located at the mouth of Shovel Creek, but describe as being on the east bank of Bogus Creek four miles above the creek's junction with the Klamath (out of the study area) (Heizer and Hester 1970:125 #80, map). Kroeber (1925:286) and Dixon (1907:map) both place *Asurahawa* above Bogus creek out of the study area. Merriam calls this Bogus Creek site *Ah–soo–rah*, a "large and important Shaste village on Bogus Creek 4 miles above its junction with Klamath River. Cedar bark from the old houses may be seen there yet. Named from Bogus Creek, *Ah-soo-rah*, which in turn was named for the pale manzanita (*Arctostaphylos viscida*). The inhabitants were called *Ah-soo-rah-ah-choo-ish*" (Merriam 1976:39).]

J. Hessig (n.d.:85–86), reminiscing about the area in 1948, mentions a "small band of Klamath River Indians" living at the mouth of Shovel Creek. This group was attacked and wiped out by the Modoc, except for captive women slaves."

Klamath Hot Springs (Modoc Site)

A. Hessig (1965:63) mentions an Indian trail from Butte Valley to Shovel Creek. The Modoc came over the trail to camp on the river and creek banks, where they would dry their fish for future use. They used the hot springs for bathing. She notes a large burial ground on the northeast side of the creek in the lava rock, explaining that they burned their dead in large holes in the lava rock. She verifies that the large holes showed evidence of fire.

Anderson (1974:33) notes ". . . the Indians partook of the hot springs at the junction of Shovel Creek and the Klamath River. The Modoc Indians had a trail from Butte Valley to Shovel Creek and they came over to fish, rest and make 'sweat houses' at the hot springs."

22 ***Chah'–hah–took'***

According to Merriam this is a " . . . Shaste winter camp in a long cave at base of cliff on north side of Klamath River opposite Klamath Hot Springs meadow. The Hot Springs are called *Cha–Cha–took*; the word for cave is *Chah'–ne–kwah*" (Merriam n.d.:G/General/N1, p. 10; cf. Heizer and Hester 1970:125).

J. Hessig (n.d.:86) places a long open cave at the base of a high cliff one fourth mile downstream from the mouth of Shovel Creek. The Indian people had a battle here and had built an earthen breastworks in front of the cave.

Cave (Modoc Site)

A. Hessig (1965:63) mentions a cave directly across the Klamath from the Hot Springs where Captain Jack and other Modoc camped, as well as Hudson's Bay trappers.

23 ***Ah–hah'–hah***

Merriam places this " . . . Shaste village on south side Klamath River 1 mile below mouth of Shovel Creek (between river and wagon road). The house of Henry Spanis now stands on the rancheria site (Merriam n.d.:G/General/N1, p. 2; cf. Heizer and Hester 1970:125). According to BLM staff the house is on east side at road, not between road and river.

24 ***Kwi–he'–re–ho'–tuk***

Merriam locates this "Shaste village on south side of Klamath River 2 miles below Shovel Creek close to river. House of Herman Spanis now on or very near rancheria site" (Merriam n.d.:G/General/N1, p. 29; cf. Heizer and Hester 1970:125).

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25 ***Kwe–chik'–kik–ke–eh'***

According to Merriam this site is of a " . . . Shaste village on north side of Klamath River 2 or 2 1/2 miles below Beswick (about half a mile above *Wahk–nim'–pah* and same distance above Wagon Bridge across Klamath River)" (Merriam n.d.:G/General/N1, p. 27; cf. Heizer and Hester 1970:125).

26 ***Wahk–nim'–pah***

Merriam locates this " . . . Shaste village on north side of Klamath River just above the wagon bridge 3 miles below Shovel Creek" (Merriam n.d.:G/General/N1, p. 39; cf. Heizer and Hester 1970:125).

CONCLUSIONS

An extensive search of the literature has revealed that the Shasta occupied the study area downstream from the mouth of Shovel Creek. The area north from this point could have been occupied through time by different peoples, including the Shasta. The most obvious occupation, however, would have been by the Klamath/Modoc and, secondarily, the area could have been shared with the Takelma and others, as Mack (1983:1) hypothesizes. It is clear that the Klamath River and surrounding territory yielded an abundance of food resources to the occupants of the canyon, whether seasonal or permanent. The canyon was also a corridor for trade and intertribal relations.

Another consideration for the Klamath River Canyon is, as Spier (1930) has suggested for at least one site, a joint occupancy area. Thus some areas of the gorge might have been occupied and used by all three of the major groups discussed in this document. Since the economic strategies followed by these groups were different, use of the canyon and its resources were concomitant but diverse. In addition to subsistence activities, spiritual activities were carried on within the study area and expressed in burial/mourning ceremonies, vision quests, salmon-calling rites, healing ceremonies, and sweat/cleansing rituals. A number of these traditional events or activities have continued to be carried on into the present day, as confirmed by consultants from all groups for this study.

This research has resulted in the identification of 26 cultural heritage sites in the study area. Knowledge of many of the sites is essentially from the last 80 years of research by the various scholars who have worked in the area. Other ethnographic sites have been identified by archaeologists and interpreted by a contemporary Shasta. Many of the 26 sites had multiple usage. There are more living areas identified than other site types. Fifteen are identified as village sites and two are campsites. Four included resource areas, one was identified as a mythological site, one was a power place, and another was a sweat locale. Religious events occurred at eight sites, six sites were thought to contain cemeteries, and one site was associated with a significant event. Detailed ethnographic work might reveal additional use areas, particularly since it is known that the canyon is used for religious purposes by both the Klamath and the Shasta.

A number of concerns and issues have been expressed by contemporary Native Americans with traditional ties to the area. Following are the major findings for this investigation: 1) protection for resources; 2) development, maintenance, and knowledge of access and rights to access; 3) identification of resources such as rock cairns, sweat pits, rain rocks, burial/cremation grounds; 4) incorporation of Native Americans in decision-making processes. It is not surprising that modern Native Americans are much concerned with preserving their traditional values as embodied in these sites. Hopefully, future archaeological interpretation will cast new light on the activities in the canyon through time.

It should be recognized that traditional uses of the spiritual areas has been ongoing, even though it may not be publicized or even known to all members of a tribe. Often opinions are not stated strongly or information given freely until sites or locations of value face imminent destruction.

Present-day Native American peoples have deep and abiding concerns regarding the cultural resources in their tribal areas. The cultural significance of a specific area may be related to a group's present-day view of its past. The manner in which a group views itself as a keeper of the past is also significant here, and the fact that Shasta and Klamath/Modoc consultants view the study area as a unit is important to scholars and Native Americans alike. This study offers a perspective extrapolated from early and present-day ethnographic field data.

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APPENDIX A

ETHNOGRAPHIC SITE RECORDS

(Information in this section has been deleted from
the published edition due to site-sensitive information.
It may be obtained from the Klamath Falls Resource Area,
Bureau of Land Management, upon request.)

APPENDIX B

MAPS: TRIBAL TERRITORIES

(USGS Quads with site locations, under separate cover)

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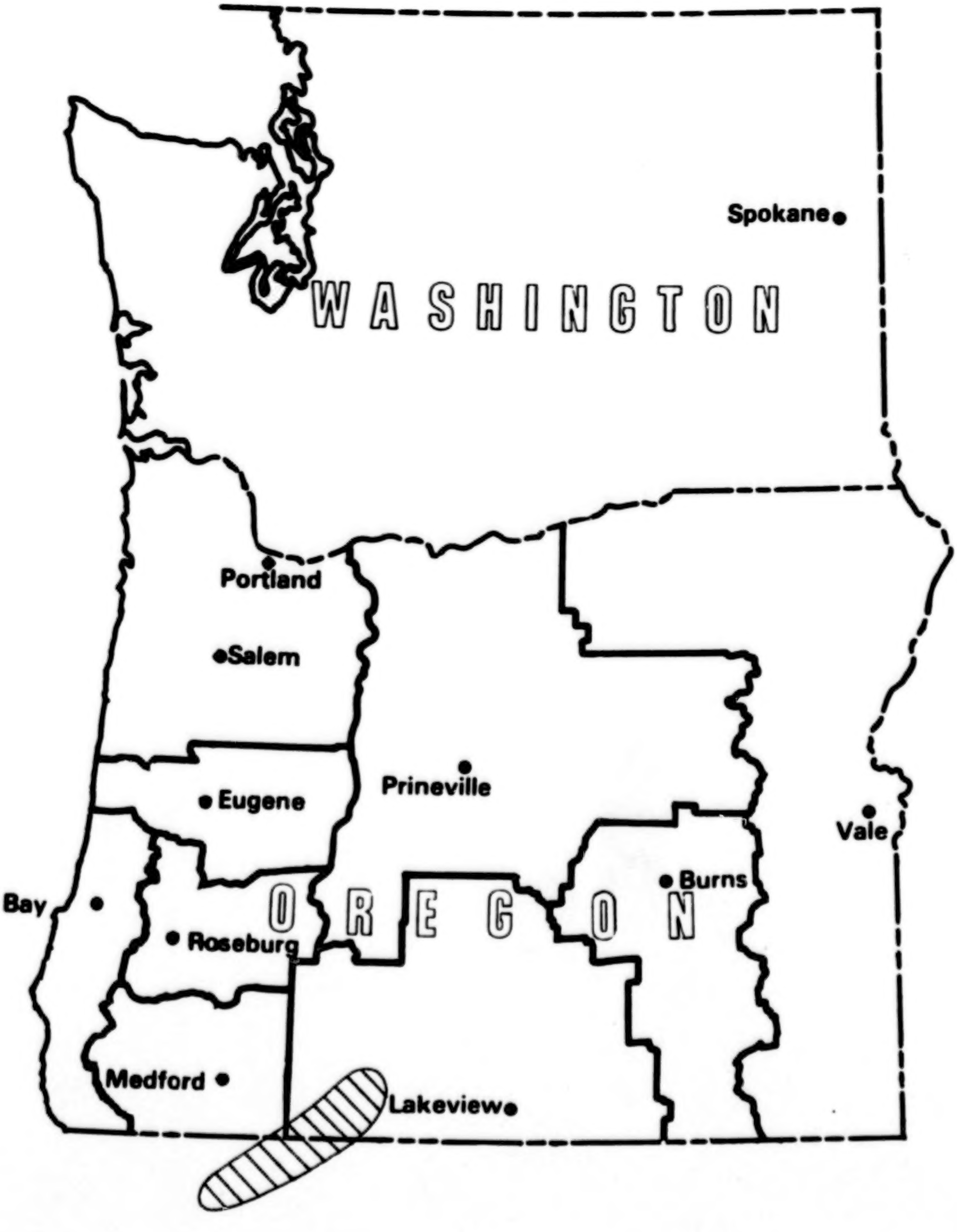
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